

SEPTEMBER 1953 2/6

Business

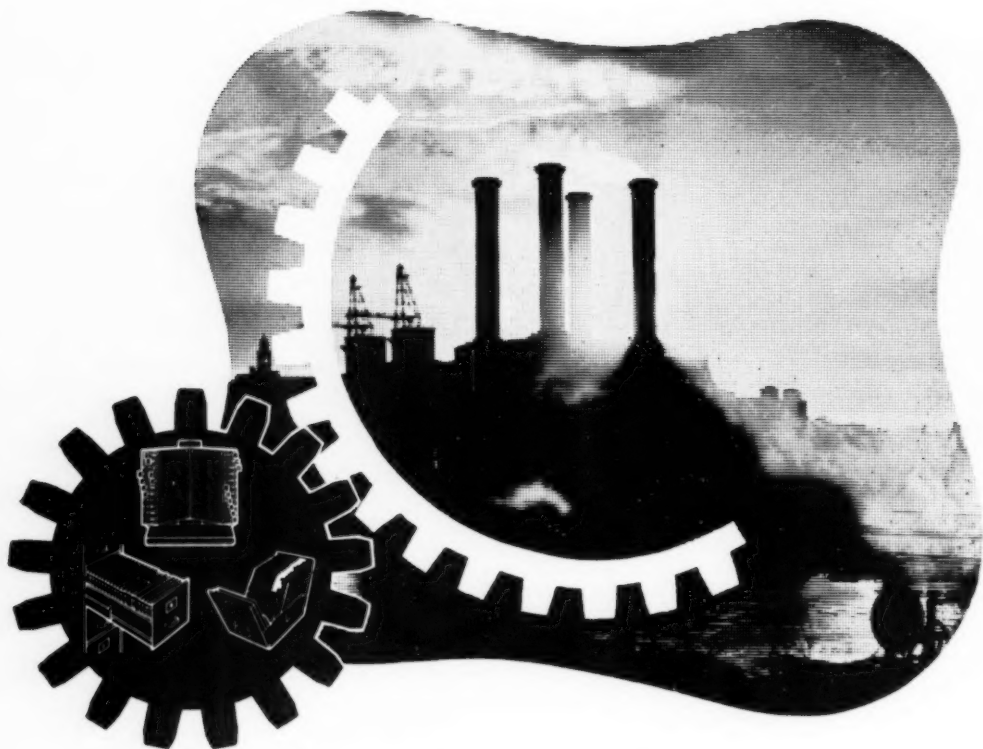
THE JOURNAL OF MANAGEMENT IN INDUSTRY

**HOW TO CUT
COSTS ALL
ROUND THE
BUSINESS**

(See page 43)

•
Contents: First Page





Essential Cogwheel



Remington—the world's busiest typewriter, in service with business and industry everywhere.

Kardex Visible Records—basis of every successful business control system.



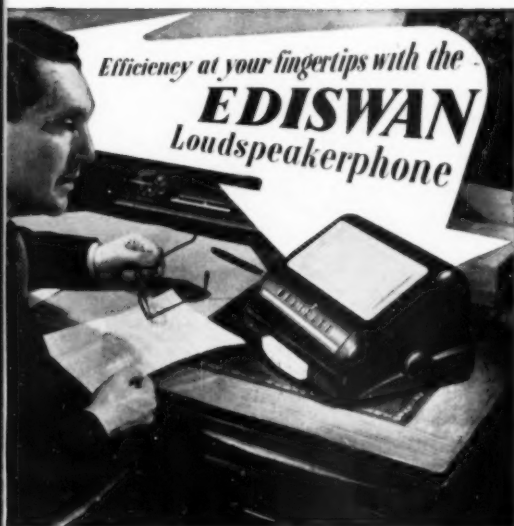
Foremost Accounting Machines—new ease, speed and accuracy in mechanised figure-work.

Remington Rand systems, machines and equipment are an essential cogwheel in the running of business and industry. Staff control, Accounts or Finance, Inventory, Purchasing, Sales or Production—whatever the job there's a Remington Rand system or machine which does it better!

There's a Remington Rand representative within calling distance of *your* business. At his disposal—and yours—is the whole range of Remington Rand products. At his back is 75 years' of Remington Rand experience in solving all kinds of business and governmental problems. Let him help you analyse your individual problems, prescribe the systems and equipment that will best meet your needs. Let him show you how Remington Rand "know-how" provides the easier way to office and industrial efficiency.

Remington Rand

Commonwealth House, 1-19 New Oxford Street, W.C.1
Telephone: CHAncery 8888



Right up to the minute in appearance and ease of operation, the Ediswan Loudspeakerphone is the most economical inter-office communication system available.

Write for a copy of booklet B100

PRICE

Standard Master Unit
for 6 extensions: £22. 10. 0
Extension Units (each) £4. 5. 0

EDISWAN LOUDSPEAKERPHONE

No purchase tax · No rentals

THE EDISON SWAN ELECTRIC CO. LTD.,
155 CHARING CROSS ROAD, LONDON, W.C.2

Member of the A.E.I. Group of Companies

RP100

Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

Contents for September

BUSINESS NEWS AND DEVELOPMENTS

PROSPECT economic supplement facing page 32

Month's Highlights and Trends	.. .. .	i
Salient Figures of the Month	.. .. .	iii
Home Market Regional Surveys	.. .. .	v
State of the Nation: Key Figures in 23 Charts	.. .. .	vi-vii
Export Market Notes	.. .. .	xi

The March of Business	... .. .	37
People, Products and Places	... .. .	39
Management at Work	... .. .	63

POLICY AND MANAGEMENT

How to Cut Costs All Round the Business	... .. .	43
<i>BUSINESS introduces an important new series on the key problem facing top management today</i>		
Counting the Real Cost	... .. . Philip F. Dyer	44
<i>The Editor of BUSINESS describes two practical methods for the day-to-day control of real costs</i>		
Over to Scientific Management	Richard Lawrence	48
<i>How a family business reorganized to meet the management problems associated with expansion</i>		
Setting the Scene for Selling	... .. . Picture Story	52
How We Train Our Salesmen (3)	Robert Spark	54
<i>This month: Hoover, Ltd., and Batchelor's Peas, Ltd.</i>		
He Sells the Brainpower in his Products	Julian Acomb	59

INDUSTRIAL MANAGEMENT AND EQUIPMENT

All-in Maintenance Cuts Transport Costs	D. Early	67
<i>How Ind. Coope and Allsopp, Ltd., obtain maximum service from the units of their transport fleet</i>		
How to Control Maintenance Costs	A. G. Thomson	71
<i>How Imperial Chemical Industries, Ltd., are using work study methods in maintenance departments</i>		
Industrial Equipment	... .. .	101

ADMINISTRATION AND OFFICE PRACTICE

Director's Office of the Month	... .. .	58
Building the Modern Office	Edward D. Mills, F.R.I.B.A., F.R.S.A.	73
<i>How the architect is catering for new methods, equipment and conceptions in modern office work</i>		
Short Cuts to Office Efficiency	... .. .	78
For Your Office: Equipment Survey	... .. .	93

HEALTH WELFARE SAFETY CANTEN

Cash Schemes Cut Absenteeism	Peter Spooner	83
Cutting Canteen Clothing Bills	Winifred McCullough	87
Canteen Equipment	... .. .	106
Welfare Equipment	... .. .	108
Classified Guide to Advertised Equipment	... .. .	2
Alphabetical List of Advertisers	... .. .	120

Change of subscriber's address: Please inform the Publishers six weeks in advance of the issue for which change of address is to take effect, and include present address in full as well as new address.

BUSINESS, Vol. 83, No. 9 (incorporating "The Magazine of Commerce," "Modern Business," "System," "Business Organisation and Management," "Business News Digest" and "British Industrial Equipment"). Published monthly by Business Publications, Ltd., 180 Fleet Street, London, E.C.4. CHAUCERY 8844. 30/- a year post free U.K.; 35/- Overseas.

ACCOUNT BOOKS	
Copeland-Chatterson Co.	21
Jones, Percy, (Twinlock)	96
Lamson Paragon Supply Co., Ltd.	...
ACCOUNTING MACHINES	
Burroughs Adding Mch.	5
Joeli Safe Co. (London)	32, 36
National Cash Register	112
Remington-Rand, Ltd.	42
Cover ii	99
Underwood Business Mchs., Ltd.	40
ACCOUNTING SYSTEMS	
Anson, Geo., & Co., Ltd.	30
Art Metal Construction	3
Carter-Davis, Ltd.	74
Copeland-Chatterson Co.	21
Kalamazoo, Ltd.	29
Lamson Paragon Supply Co., Ltd.	...
Roneo, Ltd.	81
Sankey-Sheldon, Ltd.	81
Shannon, Ltd.	97
ADDING MACHINES	
Block & Anderson, Ltd.	23
British Olivetti, Ltd.	5
Burroughs Adding Mch.	32, 36
National Cash Register Office Machinery, Ltd.	42
Sumlock, Ltd.	26, 94
Underwood Business Machines, Ltd.	40
ADDRESSING MACHINES	
Addressall Machine Co.	70
ADDRESSING MACHINE ATTACHMENT	
Fanfold, Ltd.	...
Lamson Paragon Supply Co., Ltd.	...
Roneo, Ltd.	...
Smith, W. H., & Son, Ltd.	4
ADVERTISING GIFTS	
Hochfeld, Richard, (London), Ltd.	112
BANKS	
Midland Bank, Ltd.	24
BLINDS	
Avery, J., & Co.	117
BOOKS AND PUBLICATIONS	
Pitman, Sir Isaac, & Sons, Ltd.	120
BROADCAST MUSIC	
Dictograph Telephones	12
Telephone Rentals, Ltd.	65
BUSINESS ACCESSORIES	
Coombs, H. A., Ltd.	108
Standard Office Supplies	107
CALCULATING MACHINES	
Block & Anderson, Ltd.	15
British Olivetti, Ltd.	23
Burroughs Adding Mch.	5
Monroe Calculating Mch. Co., Ltd.	77
Sumlock, Ltd.	26, 94
T.S. (Office Equipment), Ltd.	80
Typewriters Ltd.	97
CANTEN EQUIPMENT	
Bartlett, G. F. E., Ltd.	86
Holoplast, Ltd.	89
Peerless & Ericsson, Ltd.	91
V. C. Panels, Ltd.	91
CASH REGISTERS	
National Cash Register	42
Regina Cash Register	112
CINE EQUIPMENT	
Cinex, Ltd.	95
CLOAKROOM EQUIPMENT	
Harvey, G. A., & Co.	107



CLOCKS, WATCHMEN'S	
Black Time Recorders	13
Gent & Co., Ltd.	106
Synchronome Co., Ltd.	26
COIN COUNTING MACHINES	
International Coin Counting Machine Co., Ltd.	22
COLLEGES AND COURSES	
School of Accountancy, Ltd	116
The Polytechnic	118
CONDENSERS	
Telegraph Condenser Co.	14
CONTINUOUS STATIONERY	
Carter-Davis, Ltd.	74
Columbia Ribbon Mfg. Co., Ltd.	92
Copeland-Chatterson Co.	21
Egry, Ltd.	...
Fanfold, Ltd.	...
Hunt & Colleys, Ltd.	6
Lamson Paragon Supply Co., Ltd.	...
Petty & Sons, Ltd.	70
Smith, W. H., & Son, Ltd.	4
CYCLE PARKS	
Abix, Ltd.	90
Odoni, Alfred & Co.	114
The Welconstruct Co.	116
DICTATING AND RECORDING EQUIPMENT	
E.M.I. Sales & Services, Ltd.	38
Ediphone Voice Writing	7
Hartley Electromotives, Ltd.	10
Haycraft, M. & L., Ltd.	95
Office Machinery, Ltd.	99
Royal Typewriters (Dimafon)	115
The Trevor-Johnstone Co., Ltd.	66
DRAWING OFFICE EQUIPMENT	
Haycraft, M. & L., Ltd.	95
West, A., & Partners	30
DUPICATING MACHINES	
Block & Anderson, Ltd.	15
Ellama Duplicator Co.	98
Key's Rotaprint, Ltd.	31
Office Machinery, Ltd.	99
Roneo, Ltd.	...
ELECTRIC CLOCKS	
Dictograph Telephones	12
Gent & Co., Ltd.	106
IBM United Kingdom	79
Magneta Time Co.	104
Synchronome Co., Ltd.	26
Telephone Rentals, Ltd.	65
FACTORY EQUIPMENT AND ACCESSORIES	
Sankey-Sheldon, Ltd.	81
FILING SYSTEMS	
Art Metal Construction	3
Copeland-Chatterson Co.	21
Eltray Filing System, Ltd.	108
Jones, Percy, Ltd.	96
Remington-Rand, Ltd.	...
Cover ii	99
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	81
Shannon, Ltd.	97
FIRE PREVENTION	
Nu-Swift, Ltd.	119
GUMMING AND GLUING MACHINES	
Haycraft, M. & L., Ltd.	95
HEALTH SERVICES	
Cellucotton Products, Ltd.	82
Deosan, Ltd.	88
Freder Brothers	82
Harcraft, Ltd.	35
Horton Mfg. Co., Ltd.	107
Hygiene Products, Ltd.	...
Cover iii	...
Lambart & Smyth, Ltd.	85
Quis Electric, Ltd.	85
HEATING	4
Spiral Tube, Ltd.	115
INDUSTRIAL CLEANING	
B.V.C. Eng. Co.	113
Furmoto Chemical Co.	110
Lamson Engineering Co.	105
Service Electric Co., Ltd.	116
Shell Chemicals, Ltd.	16
LABELS, TICKETS AND TAGS	
Dapag (1943), Limited	19
LETTER OPENING MACHINES	
International Coin Counting Machine Co., Ltd.	22
LIGHTING	
G.E.C., Ltd.	109, 111
LOOSE LEAF LEDGERS AND SYSTEMS	
Art Metal Construction	3
Copeland-Chatterson Co.	21
Jones, Percy, (Twinlock)	96
Kalamazoo, Ltd.	29
Lamson Paragon Supply Co., Ltd.	...
Moore's Modern Methods	78
Shannon, Ltd.	97
MARKING EQUIPMENT	
Cushman & Denison, Ltd.	20
MECHANICAL HANDLING	
Lamson Engineering Co.	105
Moss, Wm., & Sons, Ltd.	103
Victrolac, Ltd.	34
Wingrove & Rogers, Ltd.	100
MICROFILM CAMERAS	
Edison-Swan Electric Co.	1
NOISE PREVENTION	
Burgess Products, Ltd.	110
Merchant Trading Co., Ltd.	81
OFFICE FURNITURE (STEEL)	
Art Metal Construction	3
Cave, C. W., & Co., Ltd.	28
Cox & Co. (Watford), Ltd.	22
Evertaut, Ltd.	28
Harvey, G. A., & Co., Ltd.	107
Milner's Safe Co., Ltd.	79
Office Machinery, Ltd.	99
Randalrak, Ltd.	110
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	81
Typewriters Ltd.	97
OFFICE FURNITURE (WOOD)	
Cave, C. W., & Co., Ltd.	28
Epstein, S., Ltd.	108
Office Machinery, Ltd.	99
Shannon, Ltd.	97
Typewriters Ltd.	97
OVERALLS	
Wheeler, H., & Co., Ltd.	115
PACKING SUPPLIES	
Britannia Folding Box Co.	114
Croxted Manufacturing Co.	114
Goshen, John, & Co.	105
Seal-less Strapping Co., Ltd.	102
Universal Pulp Containers, Ltd.	...
Cover iv	...
PAINTS	
British Paints, Ltd.	33
PARTITIONING	
Abix, Ltd.	90
Art Metal Construction	3
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	81
The Welconstruct Co.	116
PENSION CONSULTANTS	
The Noble Lowndes Pension Service	Prospect viii
PHOTOGRAPHIC REPRODUCING EQUIPMENT	
Edison-Swan Electric Co.	1
Grant Production Co., Ltd.	34
Ozalid Co., Ltd.	24
PNEUMATIC TUBE SYSTEMS	
Dart Cash Carrier Co., Ltd.	113
Lamson Engineering Co.	105
PRINTERS	
Petty & Sons, Ltd.	70
Tomkin, G. F., Ltd.	116
PRINTING MACHINES	
Key's Rotaprint, Ltd.	31
RIBBONS AND CARBONS	
Columbia Ribbon Mfg. Co.	...
Ltd.	92
ROTARY REPRODUCER	
Key's Rotaprint, Ltd.	31
SAFES	
Milner's Safe Co., Ltd.	79
Remington-Rand, Ltd.	...
Cover ii	99
SEATING	
Abix, Ltd.	...
Cox & Co. (Watford), Ltd.	...
Evertaut, Ltd.	...
Office Machinery, Ltd.	...
Victrolac, Ltd.	...
SHOW CARD ACCESSORIES	
Hill Bros. (Service), Ltd.	...
STEEL STORAGE EQUIPMENT	
Bawn, W. S., & Co., Ltd.	...
Brown, F. C.	...
Copeland-Chatterson Co.	...
Dexion, Ltd.	...
Harvey, G. A., & Co.	...
Milner's Safe Co., Ltd.	...
Odoni, Alfred A., & Co.	...
Randalrak, Ltd.	...
Roneo, Ltd.	...
Sankey-Sheldon, Ltd.	...
Westwood, Jos., & Co.	...
STRING TING MACHINE	
Croxted Manufacturing Co.	...
TABULATING MACHINES	
Brush Tabulating Machine Co., Ltd.	...
Cave, C. W., & Co., Ltd.	...
Powers-Samas, Ltd.	...
TELEPHONE AMPLIFIERS AND ACCESSORIES	
Fonadek (Branson), Ltd.	...
TELEPHONES AND SOUND EQUIPMENT	
Dictograph Telephones	...
Edison-Swan Electric Co.	...
Gent & Co., Ltd.	...
Magneta Time Co., Ltd.	...
Reliance Telephone Co., Ltd.	...
Synchronome Co., Ltd.	...
Telephone Rentals, Ltd.	...
TICKET PRINTING MACHINES	
Dapag (1943), Ltd.	...
IBM United Kingdom	...
Dictograph Telephones	...
Gent & Co., Ltd.	...
Gledhill-Brook, Ltd.	...
IBM United Kingdom	...
Magneta Time Co., Ltd.	...
Synchronome Co., Ltd.	...
Telephone Rentals, Ltd.	...
TYPEWRITERS AND ACCESSORIES	
IBM United Kingdom	...
Imperial Typewriter Co.	...
Remington-Rand, Ltd.	...
Cover ii	...
Royal Typewriters	...
Sterling Typewriter Co., Ltd.	...
T.S. (Office Equipment)	...
Taylor's Typewriter Co.	...
Typewriters, Ltd.	...
Underwood Business Machines, Ltd.	...
VENTILATING EQUIPMENT	
Colt Ventilation, Ltd.	...
Woods of Colchester	...
VISIBLE RECORDS	
Art Metal Construction	...
Cave, C. W., & Co., Ltd.	...
Copeland-Chatterson Co.	...
Kalamazoo, Ltd.	...
Moore's Modern Methods	...
Remington-Rand, Ltd.	...
Cover ii	...
Roneo, Ltd.	...
Seldex, Ltd.	...
Shannon Ltd	...

"SYSTEM"

Desk Diaries

Unique and attractive advertising diaries at extremely moderate prices, to give you all-the-year-round publicity in 1954.

Write for **FREE Illustrated Leaflet to:**

SHAW PUBLISHING CO. LTD., 180 Fleet St., London, E.C.4.



... that if you wish to lay out a complete office ... want details of an everyday item of furniture ... seek information on a suitable piece of equipment for some special purpose ... or wish to install a new filing or card-indexing system ... the Art Metal Office Planning Service is always ready to help you. Their immediate and courteous advice is yours for the asking.

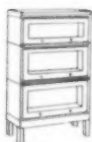
Every businessman should have a copy of 20-page catalogue "No. 60 on his files. Have you asked for a copy yet?



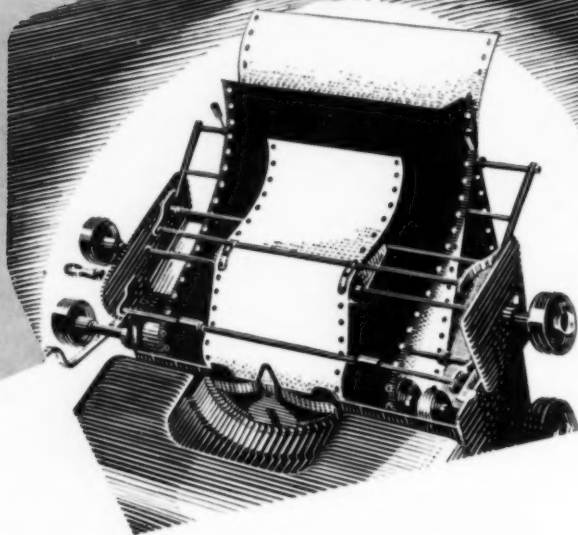
ART METAL CONSTRUCTION COMPANY

Head Office : 201, BUCKINGHAM PALACE ROAD, S.W.1.

Sloane 5201 (6 lines)



Automatic Listing!



New Dual Feed Cuts Routine Typing by Half

Here is the most impressive development in typing for many years—the Alacra Dual Feed. Where previously invoices, cheques, receipts, payslips and so on were typed in one operation and summarised separately to form a journal, payroll, paying-in-slips etc., the two jobs can now be done *in one operation*—continuously—with a 50% saving in time, labour and costs—and with no possibility of copying errors.

Almost any model of typewriter, manual or electric, can be fitted with this Dual Feed attachment which is simple and trouble-free to operate.

Furthermore, the attachment incorporates the unique Alacra frictionless feed which means that multi-part sets can be used with guaranteed accurate register and automatic alignment.

Every typewriter user should know of this important new technique It will vastly increase the scope and productivity of your typists.

Send *now* to the following address for full details without obligation.

W. H. SMITH & SON, LTD.,
9, ALLIANCE ROAD, WESTERN AVE., LONDON, W.3.



THE CASE OF THE TRAFFORD TILE

Asbestos-cement tiles like this were used to roof a whole group of factories (a Burroughs one included) near Glasgow. If the stock control system in a Manchester office had failed, some components might not have been at the right place at the right time . . .



The factory roof had to be assembled in the office!

SOME TIME AGO, Turners Asbestos Cement Co. Ltd., a member of the Turner & Newall Organization, found itself with a pressing stock-record problem. The company's six factories turn out all manner of asbestos cement products, and at the central office in Manchester, the management was finding it increasingly difficult to handle a rising volume of stores transactions. In operations that needed most accurate co-ordination (as in the distribution of supplies of roofing in Scotland) day-to-day knowledge of the exact stock position and location became imperative. Were all the components on the spot? Were there hook-bolts enough to secure the tiles?

It was at this point that the collaboration of Burroughs machine-accounting specialists was invited to assist in solving the problem. Burroughs suggested the installation of Multiplying-

Accounting Machines at the Trafford Park Works of Turners Asbestos Cement Co. Ltd. By use of these machines, Purchasing Orders, the Stores Ledger and its Journal Audit proof sheet could all be calculated, extended and posted automatically—stock balances for *all the six factories* appearing at a glance on one card.

Result: The Stores Accounts system now gives a continuing picture of the exact stock position in all the factories. The Chief Stock Controller can tell at a glance the value of total stock and the stock balance at any plant. This system, with its absolute proof of accuracy, makes ordering and controlling possible far in advance of requirements.

What about you? If your business could benefit from faster, accurate figuring, call in Burroughs. They can offer advice on all the latest systems, for Burroughs market the world's

broadest line of modern record-keeping machines: Adding, Calculating, Accounting, Billing and Statistical Machines, and Microfilming Equipment. Remember, once you have any Burroughs machine, Burroughs Service guarantees its efficiency in operation.

Call Burroughs today. Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1. Sales and Service offices in principal cities round the world.



At work on the Stores Ledger for Turners Asbestos Cement Co. Ltd., is Miss Lilian M. Hopson. She is using one of the Burroughs Multiplying-Accounting machines that helped to solve the Case of the Trafford Tile.

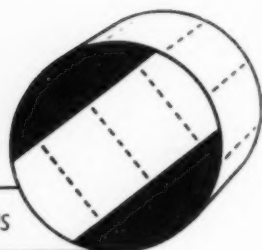
For expert advice on business figuring

CALL IN Burroughs



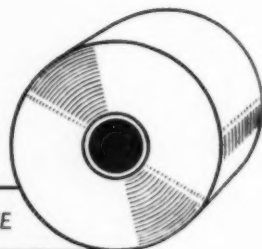
Specialized

ANY SIZE · PLAIN OR WITH ACCURATE HOLE OR SLOT PERFORATIONS



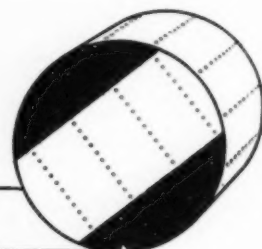
Paper

PLAIN OR GUMMED IN ANY WIDTH FOR ANY TYPE OF MACHINE



Rolls...

ANY COMBINATION OF SIZE · WIDTH OR PERFORATION



We are specialists in the production of paper rolls for all individual requirements, accurately and cleanly wound in any width and for all types of specialized machines

Your enquiries will have our prompt and careful attention. May we quote you ?

HUNT & COLLEYS LTD. SPECIALISTS IN THE MANUFACTURE OF PAPER ROLLS FOR INDUSTRY

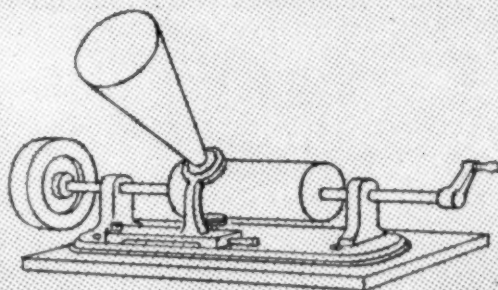
HUCKNALL ROAD · NOTTINGHAM · TELEPHONE: 61088/9



in 1877

THOMAS ALVA EDISON

amazed the world by
recording the human voice



*TODAY there is no quicker,
more economical method of
handling Memos—Reports—
Correspondence—than by*

Ediphone

•EDISON offers

ACOUSTIC or ELECTRONIC—CYLINDER or DISC
VOICEWRITERS

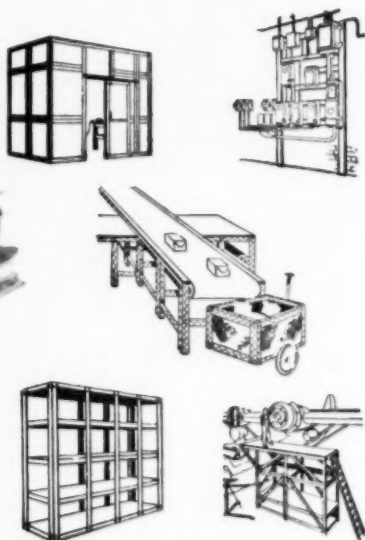
to suit your individual needs

THOMAS A. EDISON LTD., Victoria House, Southampton Row, London, W.C.1. Hol : 9988

Branches in all Principal Cities



Build your own equipment
with
DEXION
S L O T T E D A N G L E



Just cut it and bolt it, that's all!
No drawings required - rough sketches are good enough
No drilling, welding, measuring or painting. No scrap
Now available in both steel & aluminium alloy.

Write or telephone for illustrated booklet G5

DEXION LTD 189 REGENT ST., LONDON, W.1.

Phone: REGent 4841

Would you care to work for us in England, Canada or Australia? We have a number of excellent opportunities to offer young and capable men having an engineering background. Write to F. R. Dexion, Ltd., 65, Maygrove Road, Kilburn, N.W.6, stating age, education and background.

**IS YOUR
NAME IN
THIS LIST OF
COLT USERS**

British Electricity
Authority
Fusare Welding Co., Ltd.
Hepworths, Ltd.
Reckett & Coleman, Ltd.
George W. Horner & Co.,
Ltd.
Edgar Allen & Co., Ltd.
Arthur Balfour & Co.,
Ltd.
Bemrose & Sons, Ltd.
Ericsson Telephones, Ltd.
Thos. Firth & John
Brown, Ltd.
Samuel Fox & Co., Ltd.
Arthur Lee & Sons, Ltd.
Leys Malleable Castings,
Co., Ltd.
Park Gate Iron & Steel
Co., Ltd.
Ruston & Hornsby, Ltd.
Smith-Clayton Forge, Ltd.
British Thomson-Houston
Co., Ltd.
English Electric Co., Ltd.
Timson, Ltd.
Armstrong Siddeley
Motors, Ltd.
British United Shoe
Machinery Co., Ltd.
Dunlop Rubber Co., Ltd.
Garrard Engineering Co.,
Ltd.
H. Lotery & Co., Ltd.
George Kent, Ltd.
Glover Aircraft Co., Ltd.
Stewart & Lloyds, Ltd.
Aluminium Wire & Cable
Co., Ltd.
The Micanite &
Insulators Co., Ltd.
Powell Duffryn Carbon
Products, Ltd.
S. Smith & Sons
(England), Ltd.
Trollope & Colls, Ltd.
Tip Top Cleaners, Ltd.
Victoria Machine Tool
Co., Ltd.
Distillers Co., Ltd.
Monsanto Chemicals, Ltd.
Expanded Rubber Co., Ltd.
The Morgan Crucible Co.,
Ltd.
Bovater Fibre Containers
Ltd.
Adequate Weighers, Ltd.
Bourjois, Ltd.
De Havilland Aircraft
Co., Ltd.
Ferodo, Ltd.
Lancashire Dynamo &
Crypto, Ltd.
Pilkington Bros., Ltd.
Toolal Broadhurst Lee
Co., Ltd.
Siemens Bros & Co., 12
Teleflex Products, Ltd.
Ford Motor Co., Ltd.
C.A.V., Ltd.
Pritchett & Gold & E.P.S.
Co., Ltd.
May & Baker, Ltd.
The India Gutta Percha
& Telegraph Works,
Ltd.

**A FRESH LIST
APPEARS IN
EACH ISSUE**



New installation at

**WOLF
ELECTRIC TOOLS LTD**

... one of over 5,000 major

industrial organisations

with natural ventilation planned by COLT

The problem at Wolf Electric Tools was to overcome unsatisfactory working conditions which prevailed during the summer months. A ventilation survey of the six shops concerned enabled Colt to formulate a fully controllable comprehensive ventilation system involving the installation of mechanical Inflow Units for air inlet, and natural Clear Opening Ventilators for extraction purposes. The installation of

the system has since proved to be an unqualified success. Colt's wide experience in dealing with the ventilation of all types of buildings throughout industry is at your disposal. Why not take advantage of it?

FREE MANUAL with full specifications of the wide range of Colt Ventilators, is available on request. Write for Manual G18/122.



COLT

THE SPECIALISTS IN PLANNED NATURAL

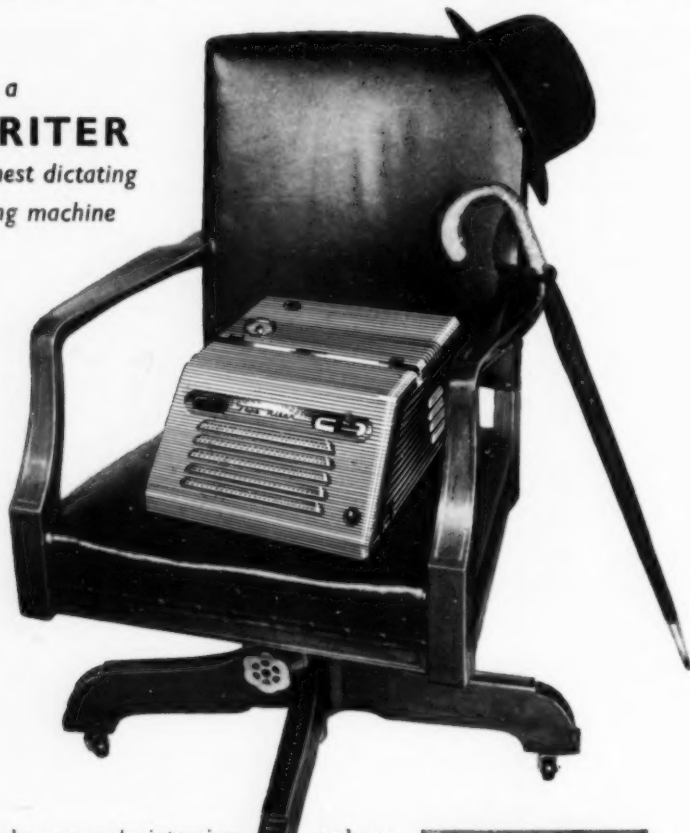
VENTILATION

COLT VENTILATION LTD • SURBITON • SURREY • TELEPHONE: ELMbridge 6511-5

Also at Birmingham, Bradford, Bridgend (Glam.), Bristol, Dublin, Edinburgh, Liverpool, Manchester, Newcastle-on-Tyne, Sheffield and Warwick.

The managing director has it absolutely taped

on a
TAPE-RITER
*the world's finest dictating
and recording machine*



CORRESPONDENCE and memoranda, interviews and conferences — you can deal with it all more quickly and more efficiently with a Tape-Riter. Take the day's letters first. You can dictate for as long as you please, without stopping the machine, while your secretary gets on with other work. You erase and correct as you go along, so that when you hand the machine over for her to transcribe she types from a fault-free recording.

Now take interviews and conferences. The magnetic tape in the Tape-Riter gives voice-perfect reproduction — an invaluable asset when the speaker's tone of voice and emphasis can be just as important as his words. Conference proceedings can be recorded in toto and then stored indefinitely, transcribed immediately or played back when wanted.

Neat, light, portable, with Single Lever Control for easy operation, the Tape-Riter will give you years of fast, accurate and versatile service.



It's a shorter cut than shorthand to office efficiency.

**HARTLEY
ELECTROMOTIVES
LIMITED**

There are Sales and Service facilities for the Tape-Riter in most large towns in this country and overseas. For further details please write to:

HARTLEY ELECTROMOTIVES LTD., 1A, HARRINGTON ROAD, LONDON, S.W.7. TELEPHONE: KNIGHTSBRIDGE 2511



"Sales Accounting is only the start"

went on the company secretary. 'Followed by what?' queried the managing director. "Powers-Samas machines are now used for invoicing, cost accounting, production control, stores ledgers, payroll, personnel records." 'Where?' "In factories, business houses, retail stores, banks, Government departments, municipal authorities, co-operative societies." 'Enough,' said the managing director. 'Let's see if Powers-Samas punched card methods can help to solve some of our staff problems.'

There is a range of Powers-Samas punched card equipment for every type of application.

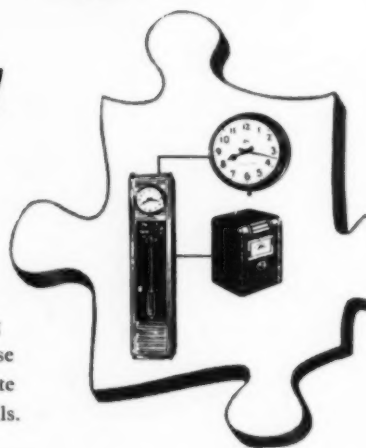
POWERS-SAMAS

Powers-Samas Accounting Machines (Sales) Limited, Powers-Samas House, Holborn Bars, London, E.C.1.



These pieces will fit into your business!

Dictograph offers many ways of increasing the efficiency of your company and saving you Time and Money . . . **Internal Telephone Systems** from 2 to 250 points or more, ensuring thought-quick-contact with any part of your organisation . . . **Staff Location Systems** to find key personnel when snap decisions have to be made . . . and **Impulse Clock and Timing Systems** providing accurate recording, sounding and indication of time—so important in these days of high production costs. Cash or Rental terms with complete maintenance. A telephone call or postcard will bring you full details.



DICTOGRAPH

Originators of loudspeaking telephones

DICTOGRAPH TELEPHONES LIMITED

CHIEF SALES OFFICE : 200 ABBEY HOUSE, VICTORIA ST., LONDON, SW 1 • ABBEY 3572 • BRANCHES THROUGHOUT THE COUNTRY
INTERNAL TELEPHONES • STAFF LOCATION • INDUSTRIAL MUSIC BROADCAST • IMPULSE CLOCK AND TIMING SYSTEMS



*proudly
present*



THE NEW BLICK "AUTOCLIP" MODEL 100

This remarkable addition to the extensive BLICK range of Time Recorders combines the advantages of the BLICK Super-automatic Two-colour "Clip" Recorder with those of "One-hand Operation". It is the last word in Time Control efficiency.

It combines all these Plus Points with the WELL-KNOWN BLICK REPUTATION FOR :

- Accuracy.
- Reliability.
- Durability.

PLUS POINTS:

- ☐ One-hand Operation.
- ☐ Clip Card Mechanism.
- ☐ Automatic Column Change.
- ☐ Automatic Two Colour Mechanism.
- ☐ Automatic Ribbon Reverse.
- ☐ Smart, modern Metal Case.
- ☐ Electrically operated.

IDEAL IN CASES WHERE:

- A really modern Recorder is desired.
- Clocking must be as simple, foolproof and unsupervised as possible.
- The work of the Wages Office must be cut to the minimum.
- Speed of clocking is important.
- Shifts or meal-times overlap.
- Workers are required to use the Clock at frequent intervals during the day.

Send for particulars today to :

BLICK TIME RECORDERS LTD.

96, ALDRSGATE STREET, E.C.1.

Telephone: MONarch 6256/8

● **Says one industrialist:**

**"We save £465
on electricity each year
without economies or
cuts in production"**

THIS is not an isolated or exceptional case. Many manufacturers subject to a kV.A. max. demand tariff or P.F. penalty clause are cutting their electricity bills by anything from 18% to 35% and more, without major plant alteration or "cheese-paring" economies.

Here are three typical examples:

- **A CEMENT MANUFACTURER SAVED £2,814 p.a.**
- **A JOINERY WORKS SAVED £465 p.a.**
- **A BAKERY SAVED £182 p.a.**

How is it done? Power Factor Correction by T.C.C. is the answer. No matter how large or small the factory, a saving can be guaranteed. If you would know more about this money-saving scheme that pays for itself in 12 to 18 months, write for the two free non-technical booklets "More for your Money" and "The Evidence". They should convince you that a T.C.C. engineer can show you how to cut your bills and make electricity really work for you.



SPECIALISTS IN
CONDENSERS
SINCE 1906



THE TELEGRAPH CONDENSER CO LTD

INDUSTRIAL DIVISION

NORTH ACTON · LONDON · W.3 · Telephone: ACORN 0061 (9 lines)



PUT IT ON THE

Banda

Please send me illustrated
leaflets with details and prices
of **BANDA**

Name _____

Address _____

(11)

LET'S HAVE BANDA — FOR PERFECT COPIES!

- no trained operator required.
- 3 to 300 copies from one 'master.'
- up to seven colours in one operation.
- only paper, fluid*and transfer sheets used.

*Let's have every copy
easy to read*

Let's have done with poor copies from old fashioned copying methods; let's have no more inaccuracies, or waste of time on checking and rechecking; let's have copies of reports or schedules, plans or drawings, memos or minutes etc.—from a 'master' that involves little more than typing or drawing on a piece of paper; let's have colour as simply and cheaply as black and white—without ink or stencils.

**POST THE COUPON
FOR FULL DETAILS**



BLOCK & ANDERSON, LIMITED
58-60 Kensington Church Street, London, W.8.

Low-cost cleaning for **Paintwork**



TEEPOL, Shell's master detergent, cleans all paintwork — flat or glossy, varnish or enamel—with outstanding efficiency. And, consequently, with great economy. It dissolves grease and suspends dirt at lightning speed, saving manual effort, saving the hard rubbing which wears out painted surfaces. TEEPOL is, in fact, the perfect general cleaning aid, ideal also for windows, mirrors, floors, dish-washing and for all surfaces to which water is normally applied.

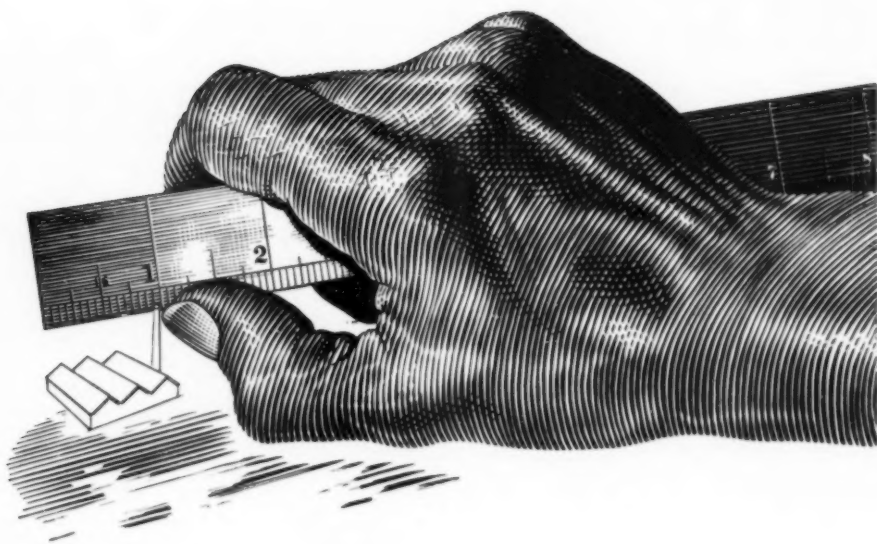
TEEPOL (liquid) is supplied in 4-gallon cans with an economy pouring device; also in 45-gallon drums and in 1-gallon cans. Write for a free illustrated booklet which describes the many uses of TEEPOL.

Clean right through with

Teepol



SHELL CHEMICALS LIMITED Divisional Sales Offices: Walter House, Bedford St., London, W.C.2. Tel: Temple Bar 4455. 42 Deansgate, Manchester 3. Tel: Deansgate 6451. Clarence Chambers, 39 Corporation St., Birmingham, 2. Tel: Midland 6954. 28 St. Enoch Square, Glasgow, C.1. Tel: Glasgow Central 9561. "TEEPOL" is a Registered Trade Mark



Too small?... are you **SURE?**

Size is illusory. But we don't want to get metaphysical—we just want to get your business. In Hollerith Punched Card Accounting, the yardstick is not physical size, but number of accounting transactions.

Have you ever counted the number of transactions your counting house handles in a week—a year? We wager that before you'd recovered from the shock you'd have lifted the receiver and asked us to call—to see whether (and how) Hollerith could help you. This far-seeing move would cost you nothing. When shall it be—today—tomorrow?

THE BRITISH TABULATING MACHINE COMPANY LIMITED

Head Office:

17 Park Lane, London, W.1

Tel: HYDe Park 8155

Offices in principal cities in Great Britain and Oversea

HOLLERITH
REGD.
**Electrical PUNCHED CARD
ACCOUNTING**

B. 535.135

TAYLORS for all makes of TYPEWRITERS

★ **ADDING MACHINES**, Calculators and other Business Appliances
BOUGHT, EXCHANGED, HIRED AND REPAIRED.

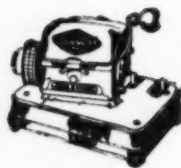


The "SUMMA" Portable Adding Listing Machine, simple to use. Adds and Subtracts from 1d. to £99,999,999 19s. 11d. Automatic Credit Balances. Fitted with Multiplication Feature. Prompt Delivery from stock. Free Delivery in U.K. FULLY GUARANTEED.

STOCKTAKING? Why not HIRE an ADDER?



ROTARY CALCULATORS, ALL MAKES. Simple rapid machines. For all calculations.

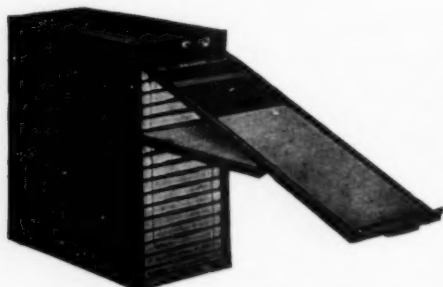


Do you realize that an altered cheque is your own liability? **ELIMINATE LOSS AND FRAUD** by using a "SAFE GUARD" cheque protector. Used by leading banks and firms. Price £18 18s. 0d. All makes of Cheque Writers at keen prices.

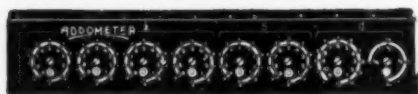
EMPIRE

Aristocrat

The Smallest and Lightest Portable Typewriter on the Market. £19 19s. 0d., with case. Fully Guaranteed.



VISIBLE INDEX SYSTEMS : KARDEX, etc.,
for sale at Keen Prices.



NO MORE ERRORS & IF YOU USE THE GUARANTEED ADDOMETER. Rapid Automatic Addition and Subtraction. Rests flat on the books. For Decimal or Ordinary Figures and Feet and Inches, etc. **FOR POCKET OR DESK.** So simple anyone can use it. In plush lined ducoid case. Size : 11½" x 2½" x ½". When ordering state for what purpose required. All models price £7 with case.

WANTED TO BUY : Modern Office Machinery: Adders, Calculators etc. Top Prices paid.

TAYLOR'S TYPEWRITER MARKET

Write, Call or Phone **HOLborn 3793**

74 CHANCERY LANE (Holborn End) LONDON, W.C.2. and at Maidenhead

Have YOU
made this
discovery?



Dapag

for every type of **LABEL • TICKET • OR TAG**
for every purpose

It doesn't need Sherlock Holmes to discover that Dapag is the firm who can solve all your label, ticket or tag problems. Let a factory-trained Dapag representative who has full experience of the application of labels, tickets and tags to all industries call and discuss how your business can be helped by Dapag—absolutely free, of course, of any obligation or charge.



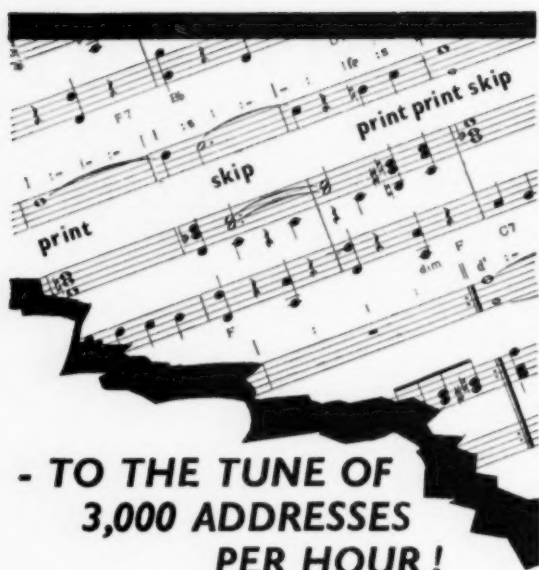
Printed

IN THE ROLL

IN STRIPS

OR SINGLE

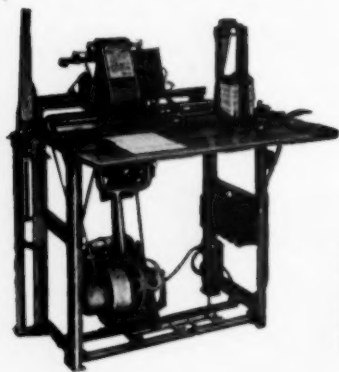
DAPAG 7-8 OLD BAILEY, LONDON, EC4 City 5373-6



- TO THE TUNE OF 3,000 ADDRESSES PER HOUR!

With the AUTOMATIC SELECTOR/REJECTOR attachment, the "Addressall" will select and address any given name classifications or combinations of same, from a general list, whilst automatically skipping others, and without dis-

turbing the sequence of any stencil in the file. With the SHEET FEED attachment, the "Addressall" will automatically list names, numbers, or other data in a continuous column form on pay sheets, etc. etc.



These are but two of the many advantages to be gained by installing the "Addressall"—the answer to every known name or data writing problem!

Addressall

MACHINE COMPANY
11-13 SOUTHAMPTON ROW, LONDON, W.C.
Telephone: HOLborn 3571-3572

★ WILL REPEAT, SKIP, DUPLICATE OR TRIPPLICATE ANY DESIRED ADDRESS AT WILL!

Flo-master the marking medium for office and industry

For rapid commercial and industrial marking in a variety of colours (transparent or opaque), Flo-master has a hundred and one uses. Here are but a few of them.

Clear indelible marking of files,
parcels, store bins, crates and drums
Coding parts for assembly
Inspection marking
Pricing of tins and jars

The Flo-master Fountainbrush is precision built and the flow of ink to the felt nib is easily controlled by the pressure on the writing surface. Fine or broad strokes can be made at will.

Flo-master is made in two sizes as illustrated:

**Flo-master
marks on
ANY
surface**

The KING SIZE
for heavy industrial
use

35/- Tax paid

The Pocket Size
24/6 Tax paid

Send for Illustrated leaflet

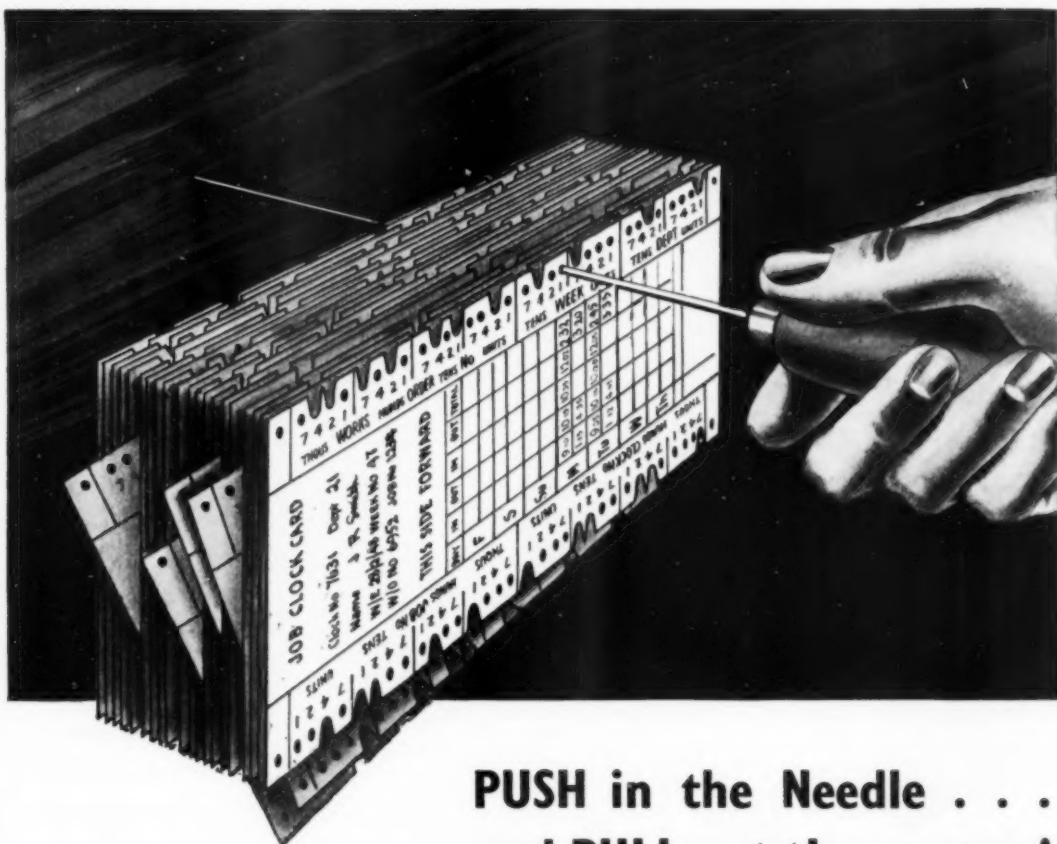
Flo-master

BRITISH MADE

FOUNT^NBRUSH

Stocked by your usual stationer or artists materials dealer. If you have difficulty in obtaining the Flo-master send your remittance direct to The Manufacturers:

CUSHMAN & DENISON CO., LTD.,
Dept. G, 124, Vassall Road, London, S.W.9.
Telephone: RELiance 4172.



PUSH in the Needle . . . and PULL out the answer!

Vital statistics for costing and all types of analyses are immediately available with the PARAMOUNT hand operated Punched Card System. It's quick . . . accurate . . . and simple — anyone can do it!



THE COPELAND - CHATTERSON CO. LTD.

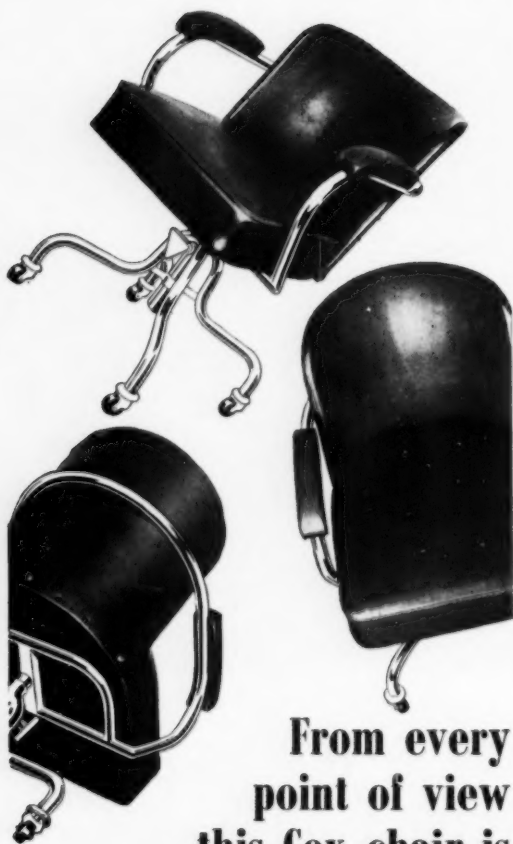
London Office & Showrooms: Exchange House, Old Change, E.C.4

Telephone: CITY 2284

Registered Office & Works—STROUD, GLOS.

Branches at: Birmingham, Bristol, Glasgow, Leeds, Leicester, Liverpool, Manchester, Newcastle-on-Tyne, Sheffield and South Wales. Agent in Eire, 63, Clanbrasil St., Dundalk.

Agents throughout the world.



**From every
point of view
this Cox chair is
a good chair**

IT'S good to look at and comfortable to sit on, but it has other virtues that only time can test—lasting strength, enduring finish and perfect functioning. This particular chair has a revolving seat, quickly adjustable for height. The steel frames are available either chrome-plated or in various stove-enamelled finishes. The upholstery can be in Vynide, moquette or hide.

Cox & Co. make many kinds of furniture, particularly chairs and tables for offices, canteens, schools and hospitals. Apply below for catalogue.



COX & CO. (WATFORD) LTD., WATFORD, HERTS
Phone: WATFORD 5631

GOODBYE, LICK-AND-STICK!

Here's how...



...to seal

outgoing post

SWIFTLY

CLEANLY

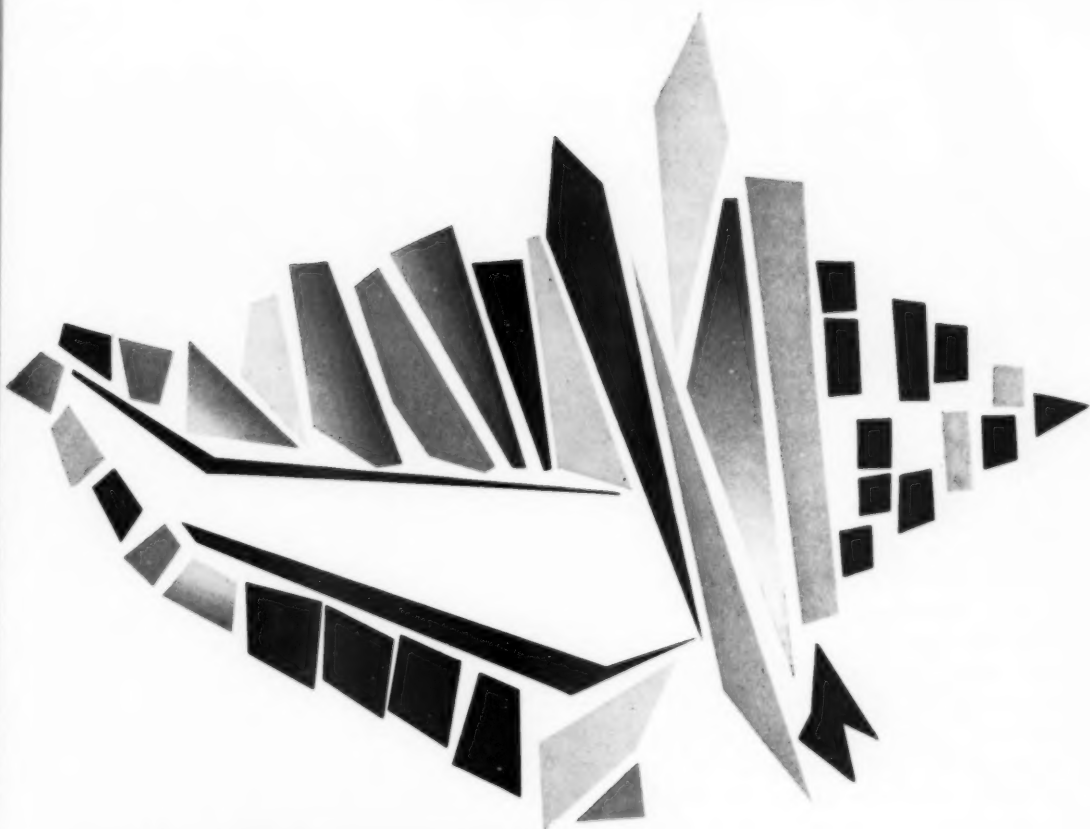
SECURELY

A few minutes only for this ICC machine to seal even a big outgoing mail! Deals with envelopes of most sizes, most thicknesses. Works smoothly, silently, and for years without trouble. There are hand- and power-operated models; a junior can work either. Size only 20 x 11 x 13 inches. May we give you a demonstration?



International Coin Counting Machine Co. Ltd.
Alexandra Road, Enfield, Middlesex
Phone: Howard 1886

*Makers of letter-opening, envelope-sealing,
coin- and token-counting machines.*



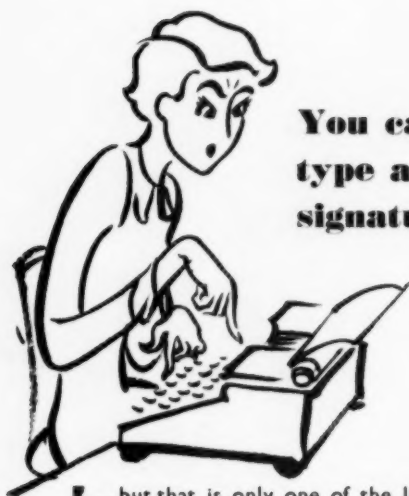
Olivetti Lettera 22

The Olivetti LETTERA 22 is specially designed for personal use. It is compact and light because good design and special materials have made it so. It is a complete typewriter, with nothing left out and no part of the construction skimped. In short, the LETTERA 22 is a first-class piece of precision engineering.

BRITISH OLIVETTI LTD
10 BERKELEY SQUARE LONDON W 1
FACTORY: SUMMERLEE STREET GLASGOW E 2

Authorised dealers throughout the country.

SEPTEMBER, 1953



**You can't
type a
signature . .**

...but that is only one of the limitations of the typewriter used for copying work; it can be expensive and mistakes can be made. OZARAPID copying on the other hand produces perfect facsimile copies of any document or illustration in a fraction of the time, at a fraction of the cost.

Perfectly dry copies can be made from any reasonably translucent original in a matter of seconds for only a penny each. Investigation shows that approximately 60% of all office mail can be copied direct

Incorporating Dry Development this process is unquestionably the quickest, cleanest and cheapest office photocopying method in existence.

*Write, phone or call for
particulars or demon-
stration.*



OZARAPID
REGD.

OZALID COMPANY LIMITED
62 LONDON WALL, LONDON, E.C.2.
Telephone: MONarch 9321 (8 lines)



September

Each year the brown nuts emerge gleaming from their green shells, but few children see this as a miracle. To them the conker is all. So it is with any efficient process that carries on from one year to the next. Even among our customers few realize how many problems are solved by the Midland Bank each day; for them it is enough to know that their bank accounts run smoothly and that the other services of this modern bank are always available for their use.

MIDLAND BANK

OVER 2,100 BRANCHES TO SERVE YOU



...in 54 seconds flat...

he gave me the complete position—that's efficient stock control for you!" The stock of any company is the equivalent of hard cash—lots of it, and that must be taken care of. In fact, so essential is the control of stock—the raw materials that keep business moving—that only the most effective recording system is worth while. That means Constructors Seldex—visible, versatile, linked to the precise needs of your particular business. Mail the coupon for full information about Constructors Seldex—the modern tool of modern management.

WHAT DO YOU WANT TO SEE? Position of stocks? Sources of supply? Prices? Customers' purchases? Work in hand? Let us supply the Seldex Visible Recording System to give you the immediate position—at a glance. Just let us know your needs.

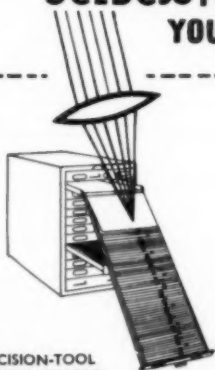
A fully qualified member of our Technical Staff is always available for those who seek advice and assistance.

CONSTRUCTORS

**SELDEX FOCUSES
YOUR FACTS**

SELDEX

VISIBLE RECORDING SYSTEMS



PRECISION-TOOL
OF MANAGEMENT

CONSTRUCTORS^{LIMITED} SELDEX (DEPT. B)

TYBURN ROAD . ERDINGTON . BIRMINGHAM, 24

Phone: Birmingham, Erdington 1616 (P.B.X.)

Please send me details of Seldex Systems particularly relating to
Departments and a free copy of "Seldex, how it works."

LONDON OFFICE: 98, Park Lane, W.1. MAYfair 3074. Also at Manchester, Leeds and Bournemouth.

Name

Firm

Address

MAKES FACTS IMMEDIATELY AVAILABLE

AUTOMATIC ACCURACY

Replaces the 'CALL-BACK' CHECK!

SUPREMELY IMPORTANT TO THE ACCOUNTING WORLD

- ★ This method *automatically* proves or disproves accuracy of ledger posting.
- ★ Any errors are also pinpointed *automat'cally*.
- ★ Trial balances may now therefore be confidently expected to 'come out' right first time and every time.

We assure you

- ★ no extra time added to the Book-Keeping Cycle.
- ★ no special Stationery, Furniture, or office lay-out.
- ★ no special Staff training.
- ★ no basic change of present methods.

**In your own interest
you should write for
further particulars to**

SUMLOCK LIMITED

1 Albemarle Street, London, W.1
Telephone: HYDe Park 1331



SYNCHRONOME

IMPULSE TIME SYSTEM

will solve these inseparable problems for you

Any time-controlled installation supplied on purchase outright or rental terms.

THE SYNCHRONOME CO. LTD.
ABBEY ELECTRIC CLOCK WORKS
MOUNT PLEASANT, ALPERTON, MDX.

Tel.: WEMbley 3643

AGENTS IN THE BRITISH ISLES

SCOTLAND: Messrs. Ellis & McDougall, 101 West Regent Street, Glasgow, C.2. Telephone: Glasgow Douglas 6566.

NORTHERN IRELAND: Messrs. F. C. Duncan & Co., 20 Church Street, Belfast. Telephone Belfast 29086.

EIRE: Messrs. Haslam, Roddy & Co., 11 Crow Street, Dublin. Telephone: Dublin 73427.

Ask the typist

When everyone has said his piece about typing and typewriters it is the typist's judgement that carries most weight. She takes into account all the really important factors: the touch, the speed, the easy accessibility of working parts, the precise alignment of letters on the page. In fifty years we have learned how to make typewriters that are, above and beyond everything else, *typist's* typewriters.

Imperial



IMPERIAL TYPEWRITER COMPANY LIMITED

LEICESTER
CR13



Seating Through the Ages

Our prehistoric ancestors were probably quite happy in using a stone as the firm foundation of their seating problems, but most people prefer a seat designed for sitting upon—a seat which is comfortable because it

has been anatomically designed—in fact an Evertaut Seat.



The Evertaut range is wide enough to provide the correct seating for practically all workers, irrespective of their job—in fact Evertaut "leaves no stone unturned" when it comes to the provision of comfortable seating.

Please write for catalogue 2A

EVERTAUT LIMITED

THE SCIENTIFIC
APPROACH TO
MODERN SEATING

(Proprietors J. B. BROOKS & Co. Ltd)

WALSALL ROAD • PERRY BARR • BIRMINGHAM, 22b.

'Phone: BIRchfields 4587 (4 lines)

*Grams: "Evertaut Birmingham"

London Office: KERN HOUSE, KINGSWAY, W.C.2. Phone: HOL 0238

In less than One minute

Findex

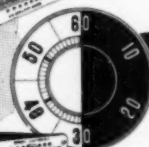
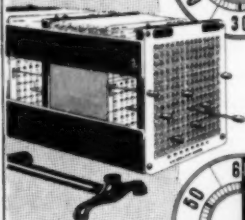
PUNCHED CARD SYSTEM

*Produces Facts
as easily as this!*



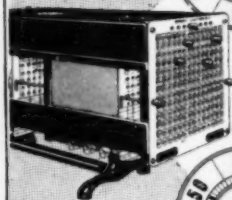
ONE-

RODDING FOR
CLASSIFICATIONS



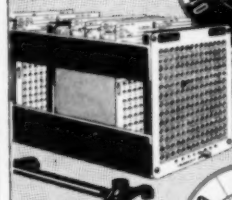
TWO-

SORTER
REVERSED—
SELECTED CARDS
DROP.



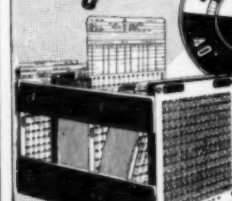
THREE-

SELECTED CARDS
OFFSET.



FOUR!

SELECTED CARD
READY FOR
HANDLING.



*"Findex"
1,000 Indexes in One!*

C. W. CAVE & CO. LTD.
59, HOLBORN VIADUCT, E.C.1 PHONE CENTRAL 3778-9.

The Full Cycle!



Hercules . . . popular all over the world for the fine service it gives even under the most exacting conditions. In some countries the bicycle is not only used for personal transport but for carrying the most fantastic loads. These users need special fitments, and such variations mean that something like 1,700 different models must be available for overseas markets. To catalogue and keep an accurate check on styles, modifications and prices was indeed a problem, only solved by the introduction of the Kalamazoo Display Binder Catalogues. These binders allow for every change to be made, simply and cheaply. Up-to-the-minute pictorial information is always available,



Just one of the ways in which

presented in a most attractive way, and fully protected from becoming soiled by frequent handling. Another Kalamazoo success!

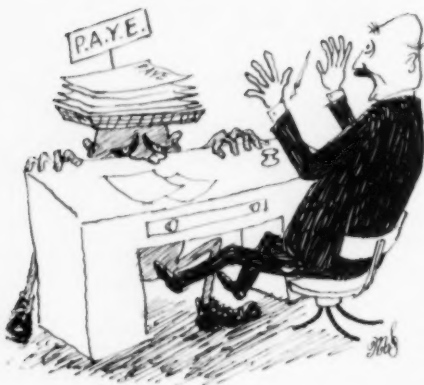
Kalamazoo

serves Industry, Commerce and Public Administration

KALAMAZOO LTD · NORTHFIED, BIRMINGHAM 31

P.A.Y.E.

THE ENEMY WITHIN



In any business, especially nowadays, wasted time, effort and money *must* be avoided.

Unchecked waste, in any form, can ruin the profit margin of *your* business.

PAYING WAGES

Your Wages Pay Roll can now be simplified with the new and unique Anson Pay Roll Machine. **THE ANSON ELIMINATES** thin perforated strips, subsequent operations to separate perforations, CUTS OUT form filling, extra entries on Tax Cards, Wages Books and Pay Slips week by week, 52 weeks a year.

THE ANSON with the magazine is three times faster, provides automatic alignment for any number of Tax Cards, a Statement for the employee, a receipt for the wages received and a complete pay roll summary in ONE OPERATION.

Remember! *The Anson Tax Card is not a carbon copy.*

★ *It will pay you to investigate the tremendous advantages of the Anson system.*

1953

Please send full details of the Anson System—without obligation.

NAME

ADDRESS

Approx. No. Employed

Pin completed coupon to your letter-heading and post to

GEORGE ANSON & CO. LTD.

(Ref. I.2.) 5 Copthall Buildings, London, E.C.2.

(MONarch 4321/4)

map and plan mounting at **WEST**



THE FIRST-CLASS JOB speaks for itself! . . . something to remind you perhaps of clean sheets newly aired! Smooth your hand across its surface. *There* is strength and durability, fine finish, fitness for its special purpose. . . . The greatest care is necessary. No two lots of paper are exactly alike. Papers, cottons and mounting boards vary in tensile strength and shrinkage factor. A particular glue will suit one job—only a certain paste can be trusted for another. Generations of craftsmen have handed on knack and knowledge of this kind at **WEST**; we are constantly experimenting, testing, making sure!

Perfected processes include joining and mounting maps and plans of all sizes on to paper, cotton and board; providing and fixing roller-and-ledge fittings; fixing to spring rollers; mounting flat or cut to fold as for road maps; providing and fixing large wooden strainers as for theatre and exhibition displays; expert repair of torn and dilapidated documents; binding reports and estimates into book form; edge-binding with 'Byndite' or silk; and varnishing and we welcome new problems!

WESTY SAYS: We specialise in mounting up competition work—faultless presentation is so important.



In the field of map and plan mounting

WEST understand your problems

A.WEST & PARTNERS LTD. 4 ABBEY ORCHARD STREET · LONDON · S.W.1
TELEPHONE: ABBey 3323



PAPERREPRODUCTION!

The production and distribution of reports, minutes, circulars and similar typewritten matter plays an essential part in efficient administration and because of the large volume of this work, particularly in local government, cost is a vital factor. In industry too, banks, insurance companies and commercial offices now find a need for better quality duplicating, but at lower cost. The solution is "Papereproduction", a word combination which sums up the new cost-cutting method where the master copy is typed on Rotamasta paper plates for perfect facsimile reproduction on the Rotaprint offset-litho printing and duplicating machine.

By this process, two great advantages are achieved at once. The quality goes UP out of all recognition and the cost goes DOWN to a new level.

Typing low-cost Rotamasta paper plates is as easy as typing on plain paper, printing them on the Rotaprint is simpler still, and, if required, the Rotamasta plates can be filed for reprints. Where hundreds of copies are needed on any kind of paper, Rotaprint "Papereproduction" is an absolute economy, but even if only ten copies are wanted the Rotamasta plate will provide them as perfect as the original at less cost than ten good carbon copies.

"Papereproduction" is only part of the value of a Rotaprint installation, for Rotaprint is a printing and duplicating machine, which can be used with equal efficiency for reproducing ruled forms, drawings, photographs and illustrated literature in black and white or colour.

Whether your work be mainly duplicating, mainly printing or a combination of both, there is obviously a case for you to find out more about Kaye's Rotaprint. Completion of the enclosed Enquiry Form will place you under no obligation. Fill it in now!



KAYE'S

Rotaprint

HONEYPOT LANE, LONDON, N.W.9.

Tel.: COLindale 8822 (12 lines)

ROTAPRINT ENQUIRY FORM

Please send, without obligation, printed specimens and full details of Rotaprint.

NAME

DEPARTMENT

Pin this Enquiry Form to your letterheading and post to:
Kaye's Rotaprint Ltd., Honeypot Lane, London, N.W.9.

B.5

Does your office stride through accounting routines . . .

or hobble?



The Burroughs M200

Direct multiplication (answers calculated and printed automatically in one fast operation); automatic proof of accuracy; direct subtraction; entries fully described as desired—these are some of the features of this speedy multiplying accounting machine. Other styles of Typewriter-Accounting Machines are available for practically all accounting routines—sales, purchase and general ledgers, statistical applications, etc., with up to 21 totals if required.

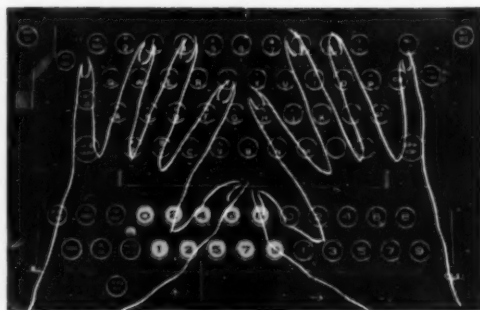
This incomparable Burroughs machine handles complete routines—faster, and at less cost

WHATEVER JOB THE OFFICE HAS ON HAND—stores records, cost accounting, payroll—the work normally divides itself into three distinct operations: calculating, posting or preparing, and checking.

On Burroughs Multiplying Typewriter-Accounting Machines the three steps are cut to one. Calculating and posting are done as a single, continuous operation—with *automatic* proof of accuracy.

The potential saving in time (and cost!) is obvious. This unique machine, the only one available with *direct multiplication*, not repeated addition, accelerates the production of complete and accurate records—giving management timely figures without posting “peaks.” You owe it to your business to see it prove its efficiency in action. Call Burroughs today.

**Burroughs Adding Machine Limited, Avon House,
356-366 Oxford Street, London W.1. Sales and
Service Offices in principal cities.**



Less waste—more speed. Illustrated here is the keyboard of a Burroughs M200 Multiplying Typewriter-Accounting Machine. The fact that all computing and typing keys can easily be spanned with two hands greatly reduces manual movements for the operator, and increases her speed and efficiency.

**For expert advice
on business figuring**

Call in  Burroughs

PROSPECT

survey and forecast of business conditions

THE BOOM GOES ON

London, August 21, 1953

THE MONTH'S HIGHLIGHTS AND TRENDS

● The spending spree continues—and there are few signs of any break. Retail turnover in June was 4 per cent. above that of June, 1952. Lower prices mean that volume trade must have been well up. Nor was this all Coronation spending. Sales of household goods were up by 14 per cent, of books and stationery by 10 per cent, and of jewellery, leather and fancy goods by 8 per cent.

● Coronation brought £23m. of business to TV. manufacturers, according to Electrical and Musical Industries, Ltd.'s, estimates. And sales have been keeping up well. June sales after the Coronation were as large as those for the whole of the second quarter of 1952.

● Car sales, too, are well up. New registrations in May reached a post-war record at 27,043; registrations for first five months were 60 per cent up on the same period of 1952. Hire purchase sales of cars in May and June were running about 50 per cent. above 1952 levels, and hire purchase sales of new motor-cycles showed a rise for the first time since last May.

● Holiday resorts from Penzance to John o' Groats report record takings after a slow start to the season. Look for British Railway receipts to break all records for July.

● Currency figures shows that spending is continuing at high levels. Circulation in August Bank Holiday week reached all-time record of £1,599m., or £84m. more than last August. Fiduciary issue had to be increased owing to the exhaustion of Banking Department reserves.

● The banks confirm the trend. June figures were abnormal for technical reasons. But net bank deposits rose from mid-May to mid-July by £149m., or £1½m. more than in the same period last year. Bank advances in the same period declined seasonally. But the drop was only £42m., against £68m. a year ago. And National Savings outstanding dropped to the lowest figure since 1948. In spite of the comics, there's more money about.

● Production, too, is rising. "Recovery" was completed in the first quarter. Since then, new output records have been made by factories and mills in most industries. Production in April, May and June has been 7 per cent. higher than a year ago, in spite of the extra holidays this year.

● Greater output from gas, water and electricity industries accounts for some of the expansion. But manufacturing industries also turned out 7 per cent. more goods in April and 5 per cent. more than in May last year.

continued on following page

THE MONTH'S HIGHLIGHTS AND TRENDS (continued)

● Biggest come-back is in the motor industry. Car shipments in June rose to 30,077—5,000 more than the previous monthly average. The industry is currently turning out a car every 15 seconds.

● How long can this boom go on? Businessmen do not seem to see any end in sight. But Treasury officials are becoming worried. They give three warnings:—

1—Production is not rising as fast as spending. Hence inflation may again become a danger.

2—Too great a proportion of increased output is going to the home market. Exports are rising—but imports are rising faster. So the balance of payments problem looms up again.

3—Either or both of these factors may mean increased production costs. So would any substantial wage increases. And rising costs might easily cripple exports.

● The inflationary argument is just a bogey. Treasury statisticians have consistently under-estimated the increase in production over the last six months. And spending can—if necessary—be rapidly cut. The banks slashed credit in July—and can do so again if it is needed. Mr. Butler still has plenty of deflationary weapons up his sleeve that he has not yet used.

● Export position is stickier. July figures were good—but not good enough. Nor can any major expansion be foreseen. Limiting factor is shortage of sterling in overseas markets. Thanks to sound policy, sterling is now a “hard” currency throughout the world. Next step must be convertibility.

● Significant sidelight on balance of payments question: Britain earned more in dividends from overseas investments in 1951 than she did in 1938. The forced war-time sales of overseas investments have been made good. Actual figures: £159.4m. in 1951, against £155.4m. in 1938.

● Convertibility moves go slowly. Main difficulty is still the American attitude—an unknown factor. No clarification can be expected until Congress meets again. In the meantime, more may be heard of British proposals at the October meeting of the Council of Ministers. But no action can be expected before 1954.

● Cost situation, too, is worrying. Raw material prices are still dropping marginally, but cannot be expected to go much farther. And some important materials—coal, iron and steel—are not only well above pre-Korea levels, but are also dearer than they were a year ago. Korean truce seems to have had little effect on the commodity market.

● Savings in raw material prices are being more than offset by steadily rising labour costs. Increased activity has brought overtime to the highest level since the war—at time-and-a-quarter or time-and-a-half. And the unions, in a strong position, are forcing wage claims through.

● Even more serious is the movement of labour away from the export industries. Consumer industries have more workers today than 12 months ago; basic industries fewer.

● Look for a row at the Trades Union Congress conference in September over the local productivity committees being set up by the British Productivity Council. The boilermakers are claiming that T.U.C. support is an infringement of union rights. But there will be no showdown on nationalization.

SALIENT FIGURES OF THE MONTH

Recovery in **production** is now complete. May index figure (8) was a record for the month, and falls in output in June of **gas** (10), **electricity** (11), **rayon** (14), **cars** (17), and **houses** (19) were purely seasonal. In each case, output was higher than a year ago.

Exception is again **coal** (9), where holidays and absenteeism have cut production.

Unemployment (7) is down again to the lowest figure since 1951. All trades, all areas report shortages of workers.

Heavy coronation spending is reflected in increased **currency circulation** (26) and **bank deposits** (27). Provincial **cheque clearings** (28) were high, and national **savings** (29) continued to decline.

Wholesale prices (33) continue to decline. Rise in engineering indices was due to a sudden rise in the price of brass, since reversed. **Retail prices** (32) rose a point.

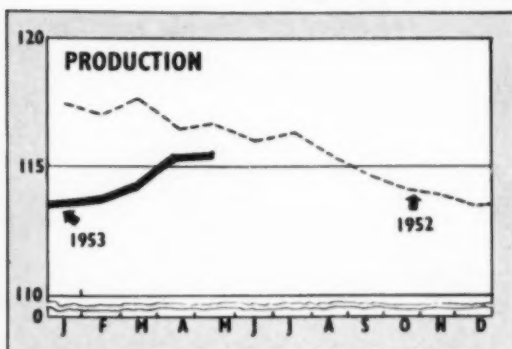
In the first quarter of 1953, people bought 4 per cent. more **food** than a year earlier (part of this was accounted for by sweets and chocolate) and 5 per cent. more **clothing** and **footwear**.

'BUSINESS' INDICES

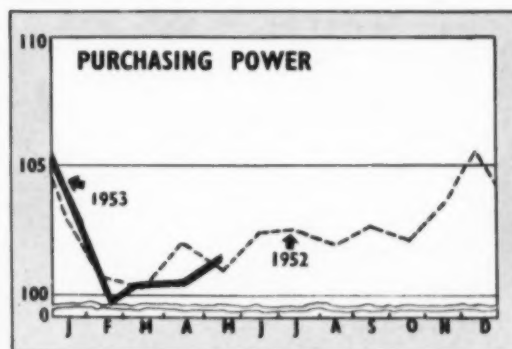
		Latest Month	Increase (+) or Decrease (-) on a	
			Month Ago	Year Ago
1. Production	1948=100	* 115.7	+ 0.6	+ 1.1
2. Purchasing Power	(do.)	* 102.8	+ 0.4	+ 0.8
MANPOWER				
3. Total manufacturing industries	thousands	* 8,724	+ 9	+ 47
4. Textiles	(do.)	* 970	+ 1	+ 49
5. Distributive trades	(do.)	* 2,638	+ 7	+ 26
6. Coal (on colliery books)	(do.)	720	- 1	+ 2
7. Registered unemployed (G.B.)	(do.)	297.7	- 42.6	- 142.4
PRODUCTION				
8. Index of prodn.: total, all inds.	1946=100	* 123	+ 4	+ 6
9. Coal (average weekly output) (thousand tons)		4,160	- 172	- 68
10. Gas available at gasworks (average weekly output)	(million therms)	44.3	- 2.4	+ 1.2
11. Electricity generated	(million kWh)	4,626	- 230	+ 499
12. Steel ingots and castings (average weekly output)	(thousand tons)	† 276.6	- 61.1	+ 2.8
13. Cotton yarn	(million lb.)	* 15.3	+ 0.8	+ 4.1
14. Rayon yarn and staple fibre	(do.)	35.04	- 1.87	+ 23.30
15. Worsted yarn	(do.)	* 17.1	- 0.7	+ 3.5
16. Sulphuric acid	(thousand tons)	* 153.4	- 5.6	+ 40.4
17. Passenger cars (average weekly output) (do.)		11.51	- 1.14	+ 3.31
18. Commercial vehicles (av. wkly. output) (do.)		4.33	- 0.59	- 0.07
19. Permanent houses completed	(do.)	26.60	- 0.08	+ 5.48
TRADE				
20. Value of imports	(£m)	† 292.9	+ 1.3	+ 2.9
21. Value of imports, Western Hemisphere	(£m)	* 50.6	- 3.2	- 25.0
22. Value of exports	(£m)	† 234.2	+ 30.3	+ 23.5
23. Value of exports, Western Hemisphere	(£m)	* 32.7	- 2.0	+ 1.3
24. Freight train traffic	(thousand tons)	† 5.12	- 0.66	- 0.18
25. Retail sale index	1947=100	121	- 5	+ 7
FINANCE				
26. Currency in circulation	(£m)	1,479	+ 13	+ 95
27. Deposits, London clearing banks	(do.)	6,299	+ 216	+ 235
28. Provincial cheque clearings	(£,000)	663	- 55	+ 43
29. National savings, total outstanding	(£m)	6,002	- 15	- 71
30. Gold and dollar reserves	(do.)	845	+ 16	+ 243
WAGES AND PRICES				
31. Weekly wage rates	1947=100	135	Same	+ 6
32. Retail prices	(do.)	141	+ 1	+ 3
33. Price indices of materials used in:				
Non-food mfg. industry	1949=100	† 144.1	+ 1.7	- 15.2
Mechanical engineering	(do.)	† 144.5	+ 2.5	- 8.3
Electrical machinery	(do.)	† 152.8	+ 2.0	- 17.9
Building and civil engineering	(do.)	† 130.5	+ 0.3	- 3.5
34. Import prices	1952=100	87	- 1	- 14
35. Export prices	(do.)	96	- 1	- 5

* May. † July. ‡ Four weeks to 14th June, 1953.
All other figures refer to June.

'BUSINESS' INDICES (1948 = 100)



A twelve-month moving average of the Official Index of Industrial Production (Total: All Industries).



An unweighted index of currency in circulation with the public, total bank deposits, and total outstanding national savings.



An electrically heated salt bath in the tool room: The Rover Co. Ltd., Birmingham

Tools, dies and gauges

HEAT TREATMENT IN A SALT BATH IS RAPID, it gives uniform results, and it protects the metal from oxidation — considerations particularly important for tools, dies, gauges, and all fine-tolerance work. An electrically heated salt bath will bring your tool room up to date, and will also give you the advantages of cleanliness, convenience, and accurate temperature control.

HOW TO GET MORE INFORMATION

Your Electricity Board will be glad to advise you on how to use electricity to greater advantage — to save time, money and materials.

The new Electricity and Productivity series of books includes one on heating — "Electric Resistance Heating". Copies can be obtained, price 9/- post free, from E.D.A., 2 Savoy Hill, London, W.C.2, or from your Area Electricity Board.

Electricity for **PRODUCTIVITY**

Issued by the British Electrical Development Association

HOME MARKET

Regional Surveys

Southern

SIGNIFICANT factor in the prosperity of the southern and south-western regions is the rapid development of **industrialization** since the war. Main centre has perhaps been Bristol, with the greatly expanded activities of the Bristol Aeroplane Co., Ltd., and the consequent increase in general sub-contracting work over a large area.

Second only in importance is Plymouth, where £1m. has been spent on new factories on Corporation-controlled sites alone, including three new factories for Berker-trex, Ltd.; Tecalemit, Ltd., and Bush Radio, Ltd. In addition, expenditure on sites other than those controlled by the Corporation bring the total up to something like £4m. Plymouth has received some priority in building licences owing to the heavy war damage sustained by the city.

Industrial development of Exeter has been advocated recently by F. Johnston, former chairman of Exeter and District Chamber of Commerce.

Agreement has been reached between the Minehead (Somerset) Urban Council and C. and J. Clark, Ltd., of Street, under which the council will erect a factory at Minehead for **boot and shoe** production. The factory will be let on a 25-year lease, and will employ 250 workers.

A new **fruit canning** factory is to be started in Southampton by North-West Cannery, Ltd., of Northern Ireland. It will employ between 500 and 600 workers, mainly women, and will pack pears, pineapples, peaches and locally-grown strawberries.

Midlands

MIDLANDS unemployment in July was down to 1 per cent. of working population, against a national average of 1.4 per cent. The improvement in trade, however, has been, in the words of Barry Kay, Regional Controller of the Board of Trade, "not by any means showy." In many instances manufacturers seemed to be holding on to their recent hard-won

gains by the narrowest of margins. In the **iron and steel** industry, business has not yet got into its swing again so far as new orders are concerned, but production is being maintained. Most light foundries have only a moderate amount of work on hand, and managements are not holding large stocks.

Engineering foundries, on the other hand, are in a relatively much better position. Many are fairly busy, though not under any pressure. A steady and, in some cases, increasing flow of work occurs in those identified with industries on full production or expanding output, such as the motor vehicle, tractor and aero engine factories. There is full activity among colliery machinery makers, and the machine tool industry has been busy for some time.

Car manufacturers are benefitting from relaxations on imports into Australia and New Zealand, and now hope to be able to continue strongly in export markets during the autumn and winter—though not at current high levels. Only factor offering a serious threat is the prospect of increased costs, following another round of rises in wages.

Significant straws: a £500,000 order for Austin's for motor vehicles for reconstruction in Korea, and the British Motor Corporation-Fisher and Ludlow link-up.

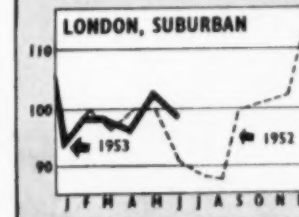
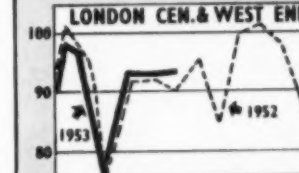
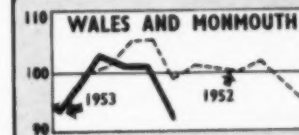
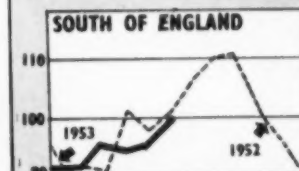
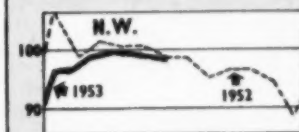
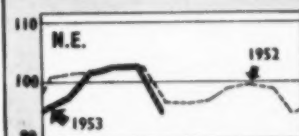
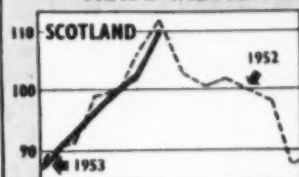
Demand for agricultural tractors is also again increasing, following a lull. Home orders have again created records, and better overseas business is reported from North America, Mexico, the Argentine, Australia and New Zealand. The merger between

Continued on page ix

What the Charts Show

Indices in the charts show retail turnover in each region in non-food merchandise as a percentage of national average (=100) for the month. The charts are based on the Board of Trade retail sales indices.

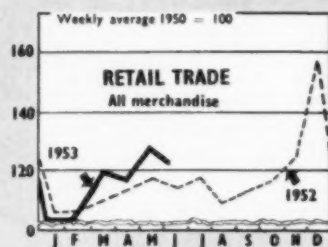
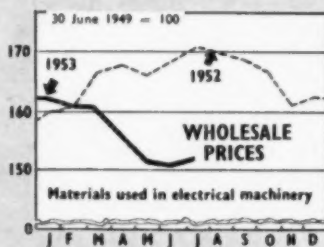
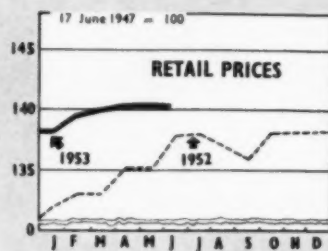
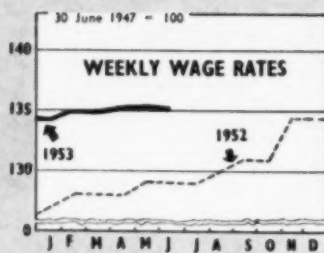
REGIONAL RETAIL TRADE INDICES



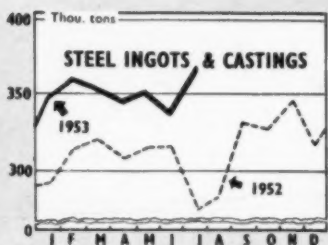
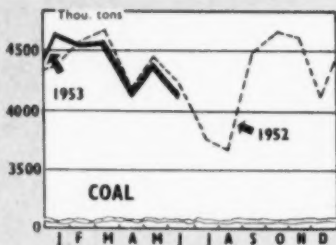
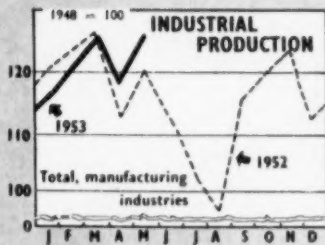
STATE OF THE NATION

From this comprehensive series of charts, covering the main economic factors affecting the state of the nation, the business man may gain a perspective of the situation governing his operations.

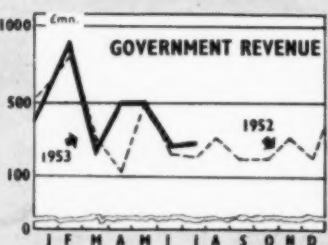
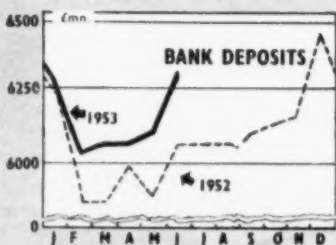
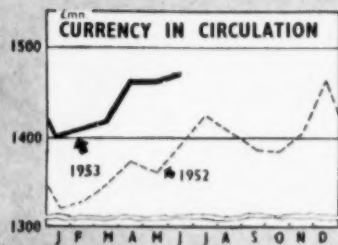
WAGES AND PRICES

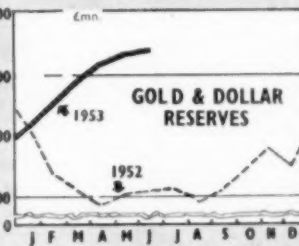
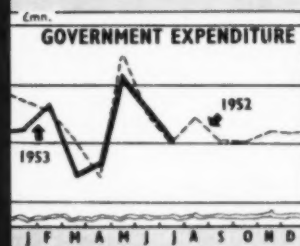
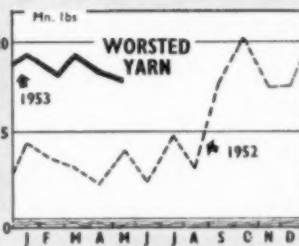
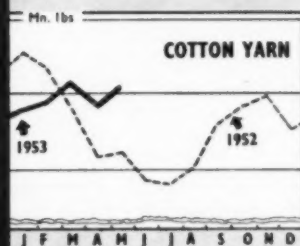
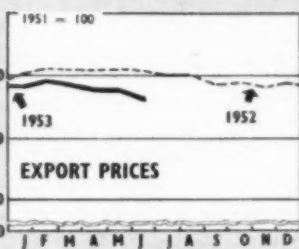
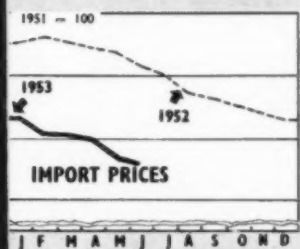
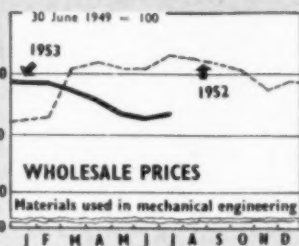
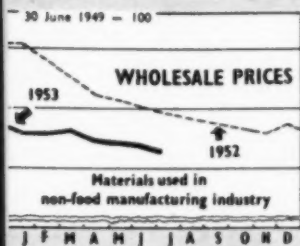


PRODUCTION

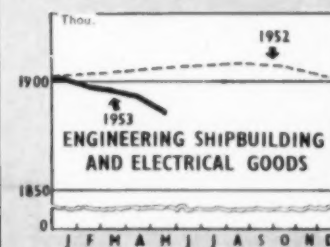
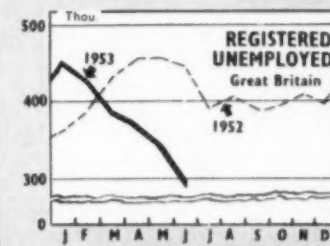
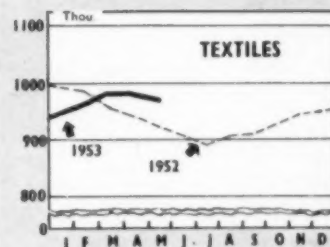
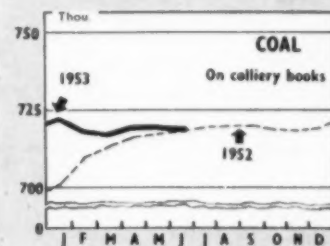
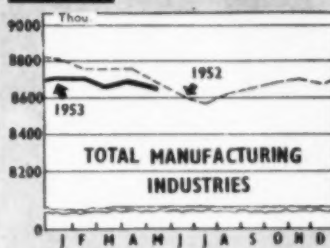


FINANCE





LABOUR





Unless your name's Rufus

What we mean is that if you combine the virtues of a lawyer, an accountant, an actuary, a tax expert, an underwriter . . . and if you can read, understand and apply the relevant legislation, then you might well devise your own Company's pension programme.

An impressive list of companies have preferred to place their pension arrangements in the experienced hands of The Noble Lowndes Pension Service. In fact, in the past two years alone, this group of seven companies has designed and installed retirement schemes of all kinds with sums assured exceeding £51,000,000.

There are good reasons for this growth . . . we should be glad to tell you what they are . . . confidentially of course . . . and without obligation.

Enquiries will be dealt with by the Managing Director

The Noble Lowndes Pension Service

38 LOWNDES STREET · LONDON, S.W.1 · TELEPHONE SLOANE 3465 (10 LINES)
3 NEWTON PLACE, GLASGOW, C.3 · 25 CROSS STREET, MANCHESTER, 2
9 TITHEBARN STREET, LIVERPOOL, 2 · 12 EASY ROW, BIRMINGHAM, 1 · 7 SOUTH PARADE, LEEDS, 1
21 COLLINGWOOD STREET, NEWCASTLE-ON-TYNE, 1 · 39 KILDARE STREET, DUBLIN

HOME MARKET REGIONAL SURVEYS (cont. from page v)

Harry Ferguson and Massey-Harris should bring more work to Coventry.

The **carpet industry** in Kidderminster is back to full employment. Only 20 workers out of 8,500 are registered as unemployed. Deliveries to the home market are quoted at from nine months to two years for Axminster. Wiltons are quieter, though busier than they have been for months. Main factor in revival has been relaxation of Australian import restrictions, plus heavy home building programme. Prices are beginning to be a problem.

Air services between Birmingham and London are to be doubled as from October 4 for the first leg of overseas flights. Cheap fares for the London-Birmingham service are to be considered shortly.

Legislation is to be sought by Birmingham City Council empowering them to create smokeless zones in the city, à la Manchester.

Yorkshire

COAL production in the Yorkshire pits is still lagging behind target, due to the effect of extra holidays. These, however, are now almost over, and the rest of the year should show better output figures. Agreement has been reached between the N.U.M. and the National Coal Board on representation on the new pit efficiency committees, and these should make their contribution.

Bradford mills have resumed activities after the holidays, and are working at full pressure. Many spinners are carrying a minimum of stocks and buying against current business is keeping the top market steady. New business is more active than usual for the post-holiday period, and prices are firm.

The Wool Export Group has announced that Russia is to buy **wool cloth** to the value of £500,000 out of the proceeds of the sale of matches to this country. A further purchase worth £2m. may be made if the Board of Trade sanctions the import of Russian plywood.

The Brough works of the Blackburn and General **Aircraft Co., Ltd.**, are fully employed, despite adjustment of defence contracts. The road roller division is expanding.

The Power-Gas Corporation, Ltd., have purchased the remaining third of the ordinary capital of Rosedowns Holdings, Ltd., which

control the business of Rose, Downs and Thompson, Ltd.

Wales

THE South-Western Coal Board have announced that a new colliery, to be called Abernant, is to be sunk ten miles north-east of Swansea at a cost of £6m. It will be 800 yards deep and will produce 750,000 tons of **anthracite** a year. The first sod will be cut shortly.

Abernant will be the deepest pit in the anthracite field, and will give access to a virgin area of workable reserves estimated at 134m. tons. Production will begin in 1958, and the new mine will be in full production by 1961. Six seams will be worked, ranging in thickness from 2ft. 6in. to 5ft.

This is the second big new anthracite venture in the area. The Coal Board have already placed contracts with a German firm to sink shafts for an anthracite colliery in Cynheidre, in the Swansea area for £7½m. Thus within ten years there will be two new anthracite mines producing 1½m. tons a year. Present annual production of 3m. tons a year comes from 3½ small mines, many of which are uneconomic.

Preliminary borings are being made at Rogerstone, near Newport, for the erection of a new **power station**. Planning permission, however, has not yet been sought for the project.

Good progress has been made on the construction of the new **shipbuilding** works at Newport for the Atlantic Shipbuilding Co., and it is anticipated that production will commence in October. First prefabricated sections of the initial ship to be built by the company will be assembled in the new dry dock by the end of the year. Canadian orders for two pulpwood carriers of approximately 3,000 each have already been received for delivery by autumn, 1954.

Possibility of re-opening the old **tinplate** hand-mill works in West Wales, which have been temporarily closed, is now under consideration. Demand for hand-produced tinplate has revived in recent weeks, but it is doubtful whether the skilled labour necessary to operate the mills is now available. About 4,900 workers became redundant when the mills were closed, of whom some were transferred to other mills where production has been concentrated. But the bulk of these have already found unemployment, and at June 15th only 484 tinplate workers

were registered as unemployed. It is now obvious that the recession in tinplate was only temporary, and that hand-mill output will be increasingly needed over the next two years until the new rolling mills at Velindre come into operation. But a move to re-open, even on a small scale, seems likely to encounter labour problems.

Contract for the main **civil engineering** and contracting work at Velindre has been awarded to Robert M. Douglas (Contractors), Ltd., of Birmingham. Total cost is estimated at £12m., and will take three years to complete. The company did similar work, costing £6m., at Trostre.

Northern Ireland

UNEMPLOYMENT has shown a steady decline over the last 12 months, with the June figure the lowest since 1951. At 7.9 per cent. of the working population, however, it is still well above the figure for Great Britain (1.4 per cent.). Employment in light engineering, expressed as a total of all employment, shows a marked rise, and similar movements are recorded in the milk products, preserved foods, hosiery and furniture industries.

Shipbuilding is in the doldrums, and Sir Frederick Rebbeck, chairman and managing director of Harland and Wolff, Ltd., recently had some caustic remarks to make on steel supplies. He described the steel situation as "a shocking state of affairs," and declared that there would not be a plate in Belfast with which to lay the keel for another ship until January. Production of steel in the foundries might be better, but the delivery of plates to the shipyards was not better, and it was plates the shipyards needed.

Northern

THE introduction of new industries to the north-east has provided nearly 50,000 new jobs, according to the annual report of the North-East Development Association and the Northern Industrial Group. These new industries are valuable assets, with a potential for expansion, but their effect is still only slight, compared with the number of people employed in basic industries.

Average number of **unemployed** in the area during the year ending March 31, 1953, was 2.8 per cent., compared with 2 per cent. for the country as a whole. The highest

HOME MARKET REGIONAL SURVEYS (concluded)

figure (4.6 per cent.) was on Wear-side, while South-West Durham and Darlington, with 1.8 per cent., were below average. "It is worth the while of any firm contemplating expansion," states the report, "to give serious consideration to North-West Durham, where there will be a supply of excellent labour in the future and some of the more congested areas of the North-East area would be avoided."

Durham County Council have withdrawn from the Association, and notice has been received of the intended withdrawal of Stockton and West Hartlepool.

Work on the first factory to be built in Peterlee, Co. Durham, will begin in November. This will be a large **spinning mill** to be built by North-Eastern Trading Estates, Ltd., for Jeremiah Ambler and Sons, Ltd., of Bradford. Several hundred will be employed, and the factory is expected to be in production in a year.

Extensions to the International Harvester Co., Ltd.'s Doncaster factory will also start next month. When these are completed there will be work for 600 workers, in addition to the 2,500 already employed.

Prospect of a new dry dock at Wallsend is under consideration by Swan, Hunter and Wigham Richardson, Ltd., the **shipbuilders**. The new dock would take ships up to 45,000 tons, and while there are still difficulties to overcome, the company hope to be able to commence work within the next twelve months.

North-Western

SIGNS of a definite improvement in conditions in the Lancashire **cotton industry** are noted in a report transmitted to the headquarters of the T.U.C. by the North-Western Regional Advisory Committee. Sir Andrew Naesmith, general secretary of the Operative Weavers' Amalgamation, in a survey of trade over the last three months, says: "Employment within the textile industry has been exceptionally good, and there has been an increasing demand for operatives to enter employment. There is no doubt about a definite improvement in the general demand for textile production."

There is evidence of inquiries from abroad, which is bound to reflect itself in the placing of orders. Trading has been more

remunerative in consequence of the fuller time working than for the past twelve months, and the profit of the industry has definitely improved. These views are confirmed by A. C. C. Robertson, former president of the Cardroom Workers' Amalgamation, and by Miss Alice Foley, secretary of the Bolton Weavers' and Winders' Association, who estimates that between 15 and 20 per cent. of cotton machinery is stopped because of lack of labour.

Vacancies notified in the mills exceed 3,800, and this figure is expected to expand as evening shifts are progressively introduced. In the clothing industry vacancies have increased from 3,800 to 6,050.

On the other hand, vacancies in the **vehicle and aircraft** industry and in **engineering** have dropped.

State of the Nation

Key Figures in
23 Charts

See pages vi and vii

though the industries are still fully employed. The only complaint of the trade is that export business is less readily available than a year or two ago, thanks mainly to increased German competition. But a large export order for textile machinery for Korea may be a sign of better times. So, too, is the receipt of a £3½m. order by Metropolitan-Vickers for power plant for Turkey.

Sir Alfred Sherman and Gerald Ritson, now touring the United States on behalf of the Lancashire and Merseyside Industrial Development Association, report an enthusiastic welcome from American industrialists in their efforts to get them to establish factories in the North-West.

Eastern

MORE details of the proposed **transfer of industry** from the Greater London area to East Anglia are revealed in a report issued by the Sudbury (Suffolk) Town Council. Two new industries (C.A.V. and Lyons) have already come into the area, and others are to be encouraged to follow. Gas and electricity ser-

vices are good, and the water and sewerage are capable of expansion. Objection is expected from the Ministry of Agriculture to the use of farm land for housing and industry, but if this can be overcome no further difficulty is anticipated. Preliminary plans agreed by the local councils and the London County Council provide for an increase in population of 5,000. Next stage is the preparation of a development map by the West Suffolk County Planning Authority.

Scotland

MAIN contract for the new Killoch Colliery, near Mauchline, Ayrshire, has now been placed, and work is expected to start on the sinking of the shafts within the next few months. The work, to cost £1½m., will be carried out by the Cementation Co., Ltd., of Doncaster, who are already doing similar work at four other Scottish collieries—Roths, Bilston Glen, Bowhill and Kinneil. The new pit will be the deepest in Ayrshire.

Completion of boring at Kenmuirhill, Glasgow, confirms that coking coal deposits there are too thin to be economically workable. Another borehole is to be sunk at Queenslie.

Greenock Harbour Trust have submitted plans to the Admiralty for a big **dry dock** on the Greenock waterfront capable of accommodating the largest warships or merchant ships yet afloat or likely to be built for many years. Cost is estimated at between £3m. and £3½m.

Two of the smaller Clyde **shipyards** have been commissioned to build a cargo motor ship of 1,200 tons by the Belfast Steamship Co. for the Belfast-Liverpool run.

The North of Scotland Hydro-Electric Board have announced plans for another £300,000 project to give **electricity** to 1,500 premises in Banffshire. Scheme will be completed by 1957.

Prestwick extension scheme, to make the Prestwick **airport** the second largest in the country, will cost at least £5m., according to Sir Patrick Dollan, chairman of the Scottish Advisory Council for Civil Aviation. Construction of a new subsidiary runway will be started next year, and, together with a new control tower, should be completed by 1956. These proposals, however, have been criticised by Scottish local authorities and by the Scottish Council.

EXPORT MARKET SURVEY

FINAL decisions by Congress before its adjournment have left U.S. trade policy as confused and uncertain as when President Eisenhower first raised the issue in the early days of the session. Nor are the President's views much clearer. He openly criticised protectionist measures — notably the Simpson Bill—and then appointed a known protectionist, Mr. Schreiber, to fill a vacancy on the Tariff Commission.

Latest report, still unconfirmed, is that he is planning to issue a directive soon that will liberalize the operations of the "Buy American Act" to help European countries.

★
I.C.I. report is salutary on exports. British exports, says an article in the *I.C.I. Magazine*, are suffering severely from a lack of sterling purchasing power in a number of traditional markets, particularly **Argentina** and **Brazil**, and this has affected I.C.I.'s sales of alkalis to these markets. This situation has been aggravated in 1953, and sales in the first quarter were substantially affected, as virtually no shipments could be made. The number of markets affected by a shortage of sterling continues to grow, and recently **Egypt** and **Turkey** have been added to the list.

★
EXPORTS of engineering goods have recently been analyzed by the Treasury and by the British Engineers' Association. The figures show that Britain has been losing ground since 1951 to the **U.S.** and **Germany**—and is still doing so.

For the U.K., the value of exports of most types of engineering goods rose steadily from 1948 to 1952. But for the first five months of 1953 all the main groups show a fall, and engineering products as a whole have fallen to about 3 per cent. below the 1952 average. German exports, on the other hand, rose faster, and showed no substantial change in 1953, while American exports, rising more slowly, continued to do so throughout this year.

The B.E.A.'s analysis shows that the shift was geographical. British exports to **Australia**, **India** and **South Africa** have been well maintained, but have lagged behind those of Germany in most European and South American countries. German machinery

exports to the U.S. in 1952 were worth £13.1m., and those of Britain only £10.5m.

★
NEW sterling policy is being mapped by **Japan's** Ministry of International Trade and Industry as basis of an aggressive export drive. Sterling will in future be given the same priority as the dollar.

Other steps include:—

1—Automatic extension of the current one-year Anglo-Japanese payments agreement, expiring at the end of this year.

2—A request to the United Kingdom for friendly conferences before any changes are made in British exchange control programmes.

3—Individual negotiations for the formulation of trade plans with various sterling area nations, especially with **Australian** and **African** territories.

4—Expansion of exports on a sterling basis to non-sterling countries.

5—Diversion of sterling holdings, as they accumulate, to investment in development projects.

Japanese authorities are sceptical about the forthcoming South-East Asiatic trade conference, and expect to be out-voted by other delegations.

★
MAIN projects under the new **Mexican** six-year plan have now been drawn up. They should offer considerable scope for British exporters of capital equipment.

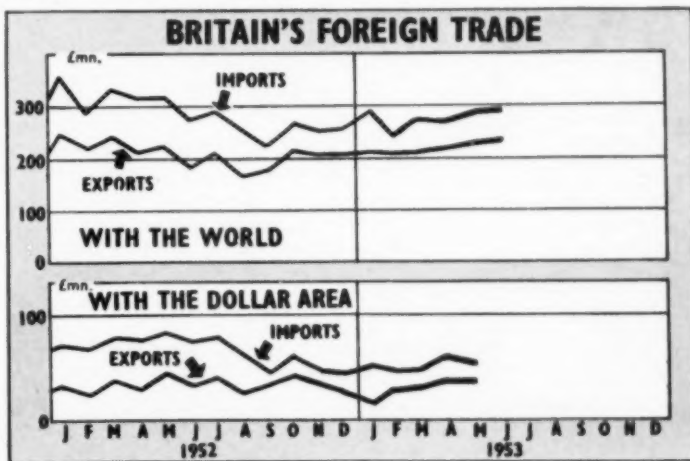
Some steps have already been taken to assist the mining industry, and these will be intensified. Other major branches of the plan, according to the Minister of Economy, are: expansion of electricity production and distribution; development of an iron and steel industry; and the foundation of a petrochemical industry.

★
LOOK for increased prospects for trade with **Brazil**. Negotiations for commercial debt arrears are going smoothly, with better Brazilian offers. Similar negotiations between Brazil and the United States and Germany are also going well. The decks are being cleared for action.

★
OPPORTUNITIES for exports of capital equipment to **Canada**, particularly metal mining machinery and electrical generating plant, were underlined by E. A. Allen, U.K. Trade Commissioner to Canada, in a visit to this country. Textile prospects were not good, because Canada had a thriving textile industry of her own.

Prospective market for toys and children's wear in Canada is "most promising," partly as a result of population trends. At the 1951 census, Canada had a population of 14m., of which 1.7m. were under five and another 1.4m. between five and ten years old.

Japan is not currently a threat in Canada, but German exports are increasing.



'ENGLISH ELECTRIC'

An interesting union of old and new ideas in marine propulsion is provided by the British Railways car ferry "Farringford", with its diesel-electric driven paddles. Such a combination has been found particularly suitable for this kind of work. The "Farringford's" two diesel-electric engines are built by 'ENGLISH ELECTRIC', who equip all kinds of vessels with main or auxiliary power units designed specifically for marine use.



bringing you

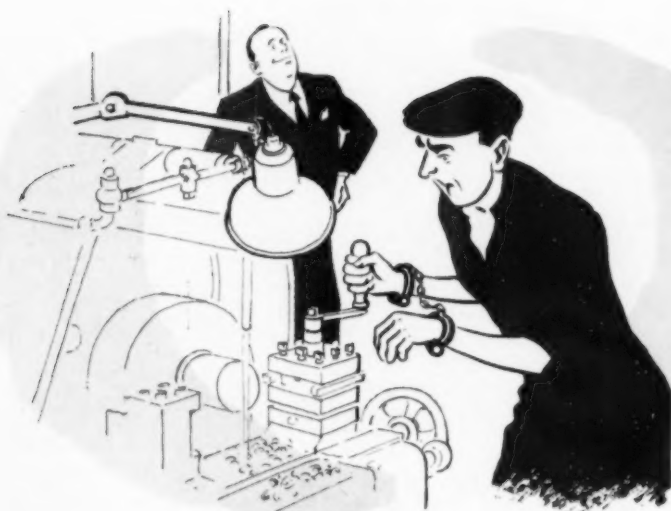
The "Farringford", with a capacity of thirty cars and three hundred passengers, ferries between Lymington and Yarmouth. She is a familiar sight to motorists visiting the Isle of Wight and a source of happy memories to thousands of holiday-makers.

Wherever electricity can play its part, by land, sea or air—in industry or the home, it is generated and adapted by 'ENGLISH ELECTRIC' for the use of mankind.



better living

The ENGLISH ELECTRIC Company Limited, Queens House, Kingsway, London, W.C.2



How to arrest Production

You need not use handcuffs to put a brake on production. Physical and Mental effort is being slowed down quite effectively in thousands of factories in a less spectacular, though equally efficient manner.

In nearly every factory and workshop where paint is used in the old traditional way production suffers as a consequence!

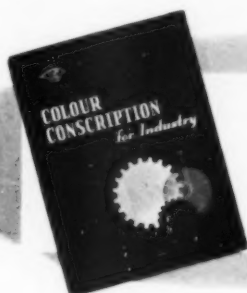
Do we suggest, then, that paint can be used to improve production?

Not only can it be so used; it is being used with that result by leading organisations.

Our Handbook "*Colour Conscription for Industry*" shows how colour can be employed to make *seeing* easier at the workbench; its effect upon output; how it may be used to combat fatigue; its influence upon absenteeism.

"Colour Conscription" has been written for the busy executive who wishes to obtain a quick understanding of the simple principles involved; it can be read in half an hour; it is well illustrated. It will help you.

A complimentary copy will be forwarded to principals on request.



Production up 10⁹/₁₀
Absenteeism down 50⁹/₁₀

Such is the record of a well-known foundry after applying the principles described in "*Colour Conscription*."

BRITISH PAINTS LIMITED

PORTLAND ROAD, NEWCASTLE UPON TYNE 2.



VICTROLEC

Mechanical Handling

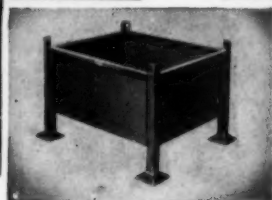
at ASCOT GAS WATER HEATERS LTD

One of many leading British Manufacturers who are using VICTROLEC "Safety Stacking" Stillage Racks and Pallets.

Victrolec study manufacturers own mechanical handling problems in relation to dimensional, stacking and load requirements; and special equipment is designed.

VICTROLEC LIMITED

261 VICTORIA ROAD - ASTON - BIRMINGHAM 6
Telephone: EASt 1454 (3 lines) Telegrams: "HALVIC" BIRMINGHAM



MULTIPLICATION

REPRODUCTION

REDUCTION

A NUMBER of rush photo-prints to be produced—turn to your Mervac. An accurate copy of an illustrated document—turn to your

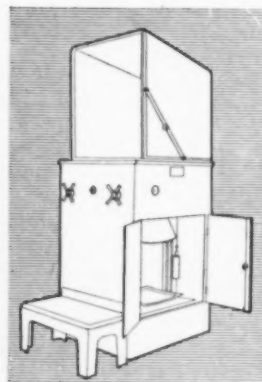
Mervac. An urgent litho plate for the "office offset"—turn to your Mervac. A drawing to be scaled to different sizes—turn to your Mervac.

It is as versatile as the Knight, and has as wide a range as the Queen ; yet it remains on its own small square of floor space all the time. There are several models ; ask us which will best suit you.

Grant Production Co. Ltd., 4 Rathbone Place, London, W.1.

(Museum 8717).

ENLARGEMENT



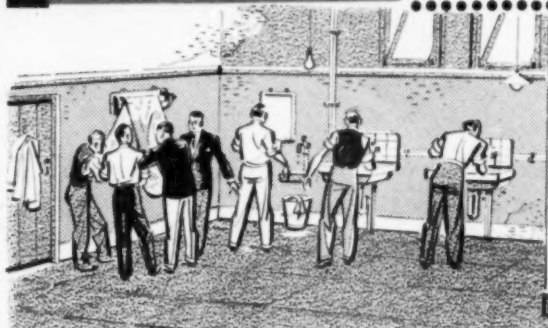
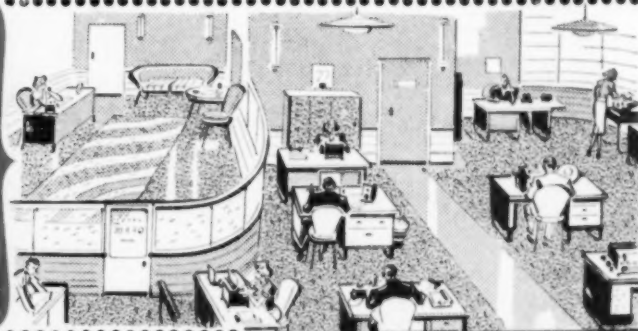
If you want something easier than chess, try working the Mervac; nothing could be simpler. This is the Mervac Standard Projector—just one of the range.

the versatile

MERVAC

Tuborgs

**This looked an
up-to-date
business...**



**until you
saw the
washroom**

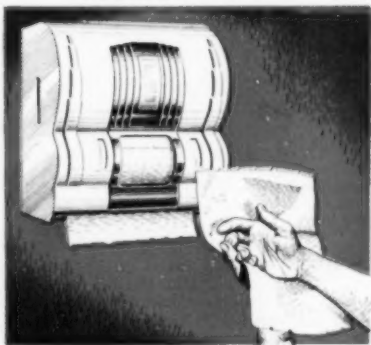
Yes, it had modern assembly lines, efficient accounting systems, but one thing had been neglected—the washrooms. Every time workers or office staff used them they ran the risk of infection from dirty roller towels. It was a definite encouragement to absenteeism. A brake on efficiency.

Are your washrooms all that they might be? Wouldn't they be bettered by Harcraft Paper Towels, which combine maximum absorbency with unequalled wet strength. Towels obtained from a controlled delivery container that eliminates waste. Towels of better quality paper . . . softer . . . more absorbent . . . and much much stronger.

A representative will be pleased to demonstrate, and advise you as to your needs. It will place you under no obligation. It *could* save you time, money and trouble.

Ask for our terms for free cabinets

**HARCRAFT LTD · ESSEX ROAD · ACTON
LONDON · W3 Telephone : Acorn 3311**



Could *more* accounting work be done ... with fewer machines?

Sensimatic Control* means limitless adaptability in one machine

BUSINESS NEVER STANDS STILL, and sometimes, accounting routines are not flexible enough to cope with heavy new commitments. But this doesn't mean that the office need get in arrears with its work, nor that a variety of different accounting machines must be installed.

There is one machine—the Burroughs Sensimatic—which can be switched in a flash to any kind of accounting operation. A single control-unit directs the Sensimatic through any *four* posting operations—and there is no limit to the number of *different* units you can use.

What does this mean? Simply, that a small business needs only one of these versatile machines to handle *all* its accounting jobs; that a large organization, as the need arises (perhaps, for the "peak-period" preparation of payroll), can switch every one of its accounting machines to one kind of work.

LOW INITIAL COST

The value of a limitlessly adaptable business tool like the Sensimatic is incalculable—but even its initial cost is far below that of any comparable machine. You owe it to your business to see it demonstrated in relation to your particular figuring problem. Call Burroughs today.



THE BURROUGHS SENSIMATIC

is now produced in 5 versions giving as many registers, or combinations of registers, as you may need.

Burroughs Adding Machine Limited, Avon House, 356-366 Oxford Street, London, W.1. Sales and Service Offices in principal cities.



***THE MEANING OF SENSIMATIC CONTROL**

This sense-plate (the Sensimatic Control unit) guides the machine automatically through every mathematical function and carriage-movement of a complete routine. Every unit—there is no limit to the number you can use—controls any four different accounting operations in any combination.

For expert advice on business figuring call in

Burroughs

The March of Business

A GUIDE TO TRAINING

TRAINING in management has mushroomed so rapidly in recent years that few businessmen can keep track of all the possibilities offered. Latest publication of the British Institute of Management, *Education and Training in the Field of Management* (200 pp., 7s. 6d.), will help them.

The book lists all subjects in the management field taught at nearly 220 major educational establishments from Aberdeen to York, including 26 universities and 15 of the largest technical colleges—with full syllabuses where possible. In addition, details are given of management subjects in the examinations of various professional and educational bodies.

A second volume—coming soon—will give similar details of short courses at residential institutions and extra-mural establishments of universities, and other “unofficial” courses.

The book is not light reading, but an invaluable reference work for the training officer.

★ ★ ★

LATEST facility laid on for busy businessmen—hunting, shooting and fishing available for overseas visitors on all-in terms at as little as 48 hours' notice if necessary. Entrance fee is 2 gns. for four weeks; hunting costs 6 to 10 gns. a day, shooting 5 to 10 gns. a day, fishing 3 to 7 gns. a day. These fees include all equipment, but not transport and accommodation. The scheme covers 60 miles of stream, 200 acres of lakes, over 100,000 acres of shooting, with 42 selected hotels and houses.

★ ★ ★

THE GAP GROWS LARGER

WE have heard all about the gap between British and American productivity. Colin Clark told us about it in 1939. Since then, it has been pointed out by many other observers. Latest news, however, comes as something of a shock. Not only is the gap still there—it is getting larger. So, at least, say the Government's

Advisory Council on Scientific Policy. British productivity since the war has been increasing at the rate of 1½ per cent per annum. This is just about half the rate at which American productivity has been rising.

Main causes for the lag, say the Council, are:

- (1) Not enough investment in manufacturing industries;
- (2) Lack of sufficient scientists and technologists;
- (3) Lack of interest by businessmen in scientific development.

Lesson for industry seems clear: spend more on equipment and research—and find out what research workers are doing. Lesson for Government seems even clearer: leave companies enough to plough back into investment in machines and boffins. Mr. Molson, Parliamentary Secretary to the Ministry

of Works, seems to think the lesson has already been learnt. Before the Budget, the Government, he told the House of Commons recently, took 59 per cent. of total company profits. Now the figure is only 56½ per cent and this, he claimed, was “a very substantial relief to industry.” Comment seems superfluous.

★ ★ ★

PITY John Raymond Bacon, of Cleethorpes. Last year, Mr. Bacon threw up a job as a railway fireman to take a six months' training course for turners, sponsored by the Ministry of Labour at Leicester. He completed the course, received a certificate of proficiency, and got a job—with a non-union firm.

After some time, he left to better himself—and his troubles started. He found that no employer would take him on without a union card. So he applied to the Amalgamated Engineering Union for membership. The A.E.U. replied that they would be delighted to have him—just as soon as he got a job.

At the time of writing, the be-

TO ALL READERS WHO WANT TO CUT COSTS

Watch for the Angle Sign



“BUSINESS” is going to help you to cut your costs all round YOUR business.

In this issue, and in every issue for many months, at least two articles will be specially devoted to practical ways of cost cutting. Not just theory. Actual case-histories of how it is being done—to-day—by progressive firms.

And we're going to make it easy for you to find these articles every month. They will be signposted by the “Cost Cutting Angle” emblem illustrated above. Whenever you see the “Angle” sign you'll know there is an article on cost-cutting—for you.

What's more, any useful hints on cost-cutting which appear in articles on other subjects will also be clearly marked with the “Cost-Cutting Angle” sign.

So, watch for the Angle. It will help you to cut your costs all round your business.

Now please turn to Page 43 for full details, and to Page 44 for the first article in this important and helpful new series of practical “BUSINESS” articles.



That's only half the story —

**The Emidicta provides a
THREE-IN-ONE office system**

**These are the facts
which make the Emidicta
outstanding :**

- Remote controls, Repeat, Stop/Start provides effortless operation.
- Quick visual indexing.
- On Office Model, listening by means of inbuilt loudspeaker, microphone or earphones (Single or double types).
- Up to thirty minutes transcription on a single disc.

**WITH INEXPENSIVE ATTACHMENTS
THE EMIDICTA WILL :**

- Record telephone messages or dictation over house or G.P.O. lines.
- Act as an inter-com allowing two-way conversation between executive and secretary.

- 1 Normal Dictation**
- 2 Remote Telephone Dictation**
- 3 Inter-com between
Executive and Secretary**



Emidicta
COMPLETE DICTATION SYSTEM

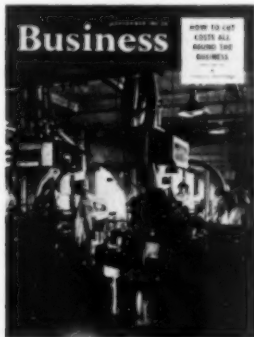
E.M.I. SALES & SERVICE LTD. (Emidicta Div.), Dept. 4a, 363-367 Oxford St., London, W.1. Tel.: Mayfair 8597. Grosvenor 7127/8.
EM174

wildered Mr. Bacon has a job. He is working for British Railways as a temporary goods guard.

★ ★ ★

CUTTING BUILDING COSTS

SPONSORS of a new society—the Modular Society—hope to cut building costs by 10 per cent, if they can get their ideas adopted. Their aims may be defined as standardization with a difference. The argument is simple. Choose the smallest unit in common use in building—the common brick. Standardize its size throughout the country. (This has already practically been done). Then see that all other building components are provided in dimensions that are multiples of the dimensions of the common brick. By this means, you will eliminate all the time-and-material-wasting “cutting to size” that now goes on at every building site in the country. And you will lose little, if any, of the flexibility of the builder.



OUR COVER shows the packing of 'Grape-Nuts' at the Birmingham factory of Alfred Bird and Sons Ltd. (See story on page 48)

BUSINESSMEN are called upon to do some queer things at times and not a few may benefit from the experience of Sir Patrick Hannon, who is just retiring from the presidency of the National Union of Manufacturers.

Sir Patrick, relates the Birmingham Post, once accepted an invitation from Midland poultry fanciers to distribute the awards in an egg-laying competition. This was a subject about which he knew nothing, but when the day arrived Sir Patrick was there with a speech that delighted the experts. Afterwards, he was asked how he managed it. With the rich chuckle; the beaming eye, and the touch of brogue so characteristic of him,

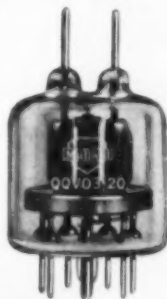
People Products Places



QUICK DISPLAY—To demonstrate and promote the Vere Engineering Company's new continuous timber board plant (see *BUSINESS*, July) in the U.S.A., the manufacturers commissioned designer Gaby Schreiber to produce an exhibition unit. In seven days it was designed, constructed, dismantled and packed ready for air freighting to America. Photographs show: above, part of the display in a New York hotel; below, the designer.

FOR TELECOMMUNICATIONS

—This new valve—known as the QQV03-20 R.F. Double Tetrode—is specially suitable for use in airborne or mobile telecommunications equipment because of its rugged construction. Built in the butterfly construction, it can be used in conventional circuits at frequencies up to and in excess of 600 Mc/s.



BANDA GOES TO SCHOOL—A. E. Block, director, Block and Anderson, Ltd., (centre), with the winners of B & A's Coronation competition for schools. The competition was held primarily to gauge the value of Banda duplicating machines in education. Over 400 entries were received from schools all over Britain. A similar overseas competition is being held.

—B.B.D. cont.—

Comprehensive Mechanised Accounting—at a cost of less than £350

UNDERWOOD SUNDSTRAND
PORTABLE ACCOUNTING MACHINE

for

SALES AND PURCHASE LEDGER POSTING
STORES RECORDING • PAY ROLL AND
P.A.Y.E. • COSTING AND ALL OTHER
ACCOUNTING RECORDS



NUMERAL KEYBOARD has ONLY TWELVE KEYS perfectly suited for TOUCH-OPERATION — SO EASY TO LEARN, SO SPEEDY IN USE.

FULLY AUTOMATIC — THE CONTROL PLATE, interchangeable in a matter of seconds, performs every function except feeding and withdrawing forms and setting up figures on the keyboard.

SMALL and COMPACT, requiring very little office space, the UNDERWOOD SUNDSTRAND PORTABLE ACCOUNTING MACHINE is ECONOMICAL from all angles . . . it calls for a minimum of initial investment . . . it requires no costly specialists to operate it . . . it quickly repays its purchase price (and many times over) because it does the work so much FASTER, BETTER and MORE ACCURATELY.

*Underwood Rhythm-Touch de-Luxe
Typewriter*



Underwood Sundstrand Adding Machine



Tools of efficient management

Underwood Business Machines Ltd.

4-12 NEW OXFORD STREET, LONDON, W.C.1 TEL: CHA 3131 Factories: Brighton, Sussex

Sales and Service Everywhere

Sir Patrick replied: "Sure, it's all in the Encyclopedia Britannica, me bhoy!"

★ ★ ★

THE BUSY B.E.E.S.

OA.B.E.T.A., organizers of the Business Efficiency Exhibition, are not resting on the very substantial laurels they won in June at Olympia. Three more exhibitions, in various provincial centres, are scheduled for this year, and plans are well ahead for 1954.

This year's crop are:—

Cardiff. September 14 to 17, at the Drill Hall. Nearly fifty firms will be exhibiting, so that our Welsh readers may see the latest office equipment without having to make the long trip to London.

Scarborough. September 22 to 24. A smaller exhibition run in conjunction with the annual conference of the Law Society.

Newcastle. November 17 to 20. A regional B.E.E. at the Northumberland Hall.

First of the 1954 exhibitions will be a regional one at Leeds, from February 23 to 26.

In the export field, the industry is holding its own. Exports of office machinery and equipment in the first half of 1953, at £5,050,467, were only marginally lower than the £5,137,816 for the same period of 1952. Main lag was in the field of typewriters and duplicators; accounting machinery and "other" machinery exports both showed increases. And exports to the United States again broke all records, with a figure one-third higher than for the same period of 1952.

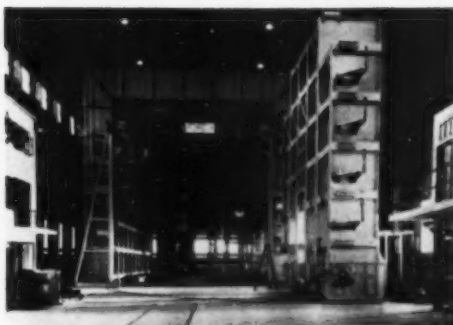
★ ★ ★

INFORMATION of a "National Association of Practising Accountants" is proposed by important sections of the chartered, incorporated and certified accountancy bodies. New association would not compete with existing ones, would not hold examinations or give qualifications. Nor would it give anybody any more letters after his name. Main purposes: registration; representing unified interests of accountants generally; information on conduct of practice; guidance on fees; organization of pension facilities; facilitating transfer of accountancy work from unqualified persons; obtaining benefits on practising costs.

SEPTEMBER, 1953

People Products Places

cont.



NAVAL NUTCRACKERS—Believed to be unique, this giant Admiralty testing frame enables full scale stressing experiments to be made on warships' structures. When defence requirements permit, it will be made available for research in commercial shipbuilding and civil engineering.



SOME MISTAKE, SURELY?—

Not at all. Picture on the left was taken in Zurich, Switzerland, during the recent "Made in England" exhibition, where 130 British firms showed everything from jet engines to biscuits. Two London Transport buses ran a special service between the main station and the exhibition. There were 10,000 visitors in the first four days. Some of the stands are seen above.

FILM FOR THE TYPIST—

A scene during the shooting of the Imperial Type-writer Company's new film "At Your Finger Tips". The film follows, step by step, the course which the beginner in type-writing should follow to become an efficient touch typist. It is intended for distribution to schools and colleges.





National

series **'E.N.'**

**A new range of ADDING MACHINES and
SMALL OFFICE BOOK-KEEPING MACHINES**

(standard models available for immediate delivery)

The FEATURES that make the difference . . . Automatic Debit and Credit Balances;
Automatic Grand Totals and Sub-Totals; Self-printing Noughts; Automatic Spacing;
Automatic Punctuation and Colour Change (Red and Black);
No Levers; Fingertip Control.

THE NATIONAL CASH REGISTER COMPANY LTD.

LONDON AND ALL PRINCIPAL CENTRES

MAKERS OF THE FAMOUS 'CLASS 31' DIRECT ENTRY ACCOUNTING MACHINE

How to Cut Costs All Round The Business

AN IMPORTANT NEW SERIES
FOR TOP MANAGEMENT

"Export or die" is again the nation's watchword. But exports can go up only if prices come down. And prices can only come down if costs are cut—all round the business. So, for the next twelve months, BUSINESS is going to concentrate on describing the ways in which businessmen can solve the problem of keeping their prices competitive in an increasingly competitive world.

TODAY'S headaches in industry are all concerned with cost. Production is booming. Materials are easier than at any time since 1939. Money is more plentiful, and sales on the home market are rising month by month. The export side, however, shows a different picture. World volume of trade is rising. But Britain's exports are stagnating. So Britain's share in world trade is declining. In the battle for overseas markets, we are losing to newcomers—to a reviving Germany and Japan, to developing countries like Canada and South Africa. And the reason can be summed up in a sentence—we are being priced out of the market.

Hence the emphasis on costs. "We must get our costs down," says the Chancellor. "Only if costs are streamlined, waste eliminated, can prices fall at home and remain competitive abroad," echoes Sir Harry Pilkington, president of the Federation of British Industries.

BUT how can we cut our costs? Only by a concerted and intensive cost-cutting campaign in every business in the country—in *your business*. Such a campaign must be planned and carried right through the business—from the board-room to the bench, from the chairman's expense account to the office boy's misuse of paper clips and rubber bands.

A panic-stricken "economy" campaign, however, may do more harm than good. Action must be planned, and its effect measured and compared with intention. Hence the first few articles in this series will be devoted to the broad strategy of such a campaign—the initial measures which top management must take to ensure that policy is implemented—and revised if and when experience shows this to be necessary.

LATER in the series, the articles will deal progressively with tactics, with the detailed application of practical cost-cutting methods in the workshop, the office, the canteen, at every stage of the manufacturing process from the initial purchase of raw materials to the final sale of the finished article.

Each month, there will be an authoritative survey of some aspect of the problem, setting out briefly and succinctly proved methods. And, each month, a further article will illustrate the thesis with a detailed case-history, showing how one firm has successfully used these methods to solve their own cost problem.

For First Article, see following page

COUNTING THE COST

Cost
Cutting
Angle

Money costs are an essential factor in determining sales policy. But they are of little value in controlling day-to-day efficiency within the organization. Better measuring tools for management controls are labour productivity indices and plant productivity indices. With these, a few simple charts will pinpoint areas where economies can be made—and measure the effect of actions taken to achieve them.

Two Practical Tools for the Day-to-Day Control of Costs

By PHILIP F. DYER, *Editor, BUSINESS*

IN starting a lengthy series of articles on cutting costs, the first question to be asked is, "What is cost?"

The average businessman may well think such a question ridiculous. For if he employs a good cost accountant, he gets regular reports showing the latest figure, to two places of decimals of a penny, of every product his factory turns out. With such figures he can keep charts or graphs showing the rise and fall of his production costs.

But such figures have two major drawbacks as tools in the day-to-day administration of a business:—

1 Money costs are unselective; they do not discriminate between the factors which the businessman can modify and those outside his control. Thus they cannot give him a picture of the relative efficiency or inefficiency of his operations.

2 They are, over a period of time, an elastic tape measure, whose elasticity must be taken into account before any reliable comparisons can be made. And the estimates of this elasticity are apt to be tricky calculations.

The money cost of a finished product is determined by a wide variety of factors operating simultaneously. Some of these the

businessman can control. Others are imposed on him from outside.

Raw material costs, for instance, are to-day normally outside the individual consumer's control. So are basic wage rates, rents, rates, bank charges and a host of other costs. If the National Coal Board decide next week to increase coal prices by 10 per cent, there is nothing (bar a *post facto* protest, of doubtful efficacy, to a consultative committee) that the individual coal user can do to nullify the effects on his production costs.

There are only two ways in which he can deal with the situation. He can pass the increase in cost on to his customer—if his customer will accept it. Or he can absorb it himself at the expense of his profit margin, and hope to recoup his loss later by economies in other directions. But, in either case, the higher price that he must pay for his coal will be reflected in an increase in the money cost of his product, as shown in the documents presented to him by his cost accountant.

Other things being equal, this would not matter. The businessman would immediately realize the cause of the increase, and reconcile

himself to accepting it with as good a grace as possible.

But, outside the text-books, other things never are equal. The week that sees an increase in the price of coal will also see many other changes in the economic situation—other price changes, changes of methods and materials, changes in the efficiency with which management and workers operate.

"Price" Confusion

If so much uncertainty can exist over a single week, how much more difficult must comparisons be over a period of years. A packet of cigarettes to-day costs 3s. 7d.; in 1939, it cost 1s. Yet nobody would seriously suggest that the tobacco industry to-day is working at only two-sevenths of its pre-war efficiency. Yet that is what a purely monetary comparison would seem to imply.

And if a comparison in terms of a single currency can be so obviously misleading, it is small wonder that even statistical experts boggle at the task of comparing the performances of industries in different countries, with different currencies—and continue to

regard with some scepticism the detailed claims to higher efficiency made on behalf of American industries.

For all these reasons, industry to-day is seeking—and in many cases has found—some method of measuring day-to-day and year-to-year changes in the operating efficiency of a factory that successfully discounts changes due to fluctuations beyond the management's control, changes in prices or in the value of money.

(1) Measurements of Manpower

The simplest of these—and by far the most important—is the conception of production per man-hour (PMH), or its inverse, operative hours per unit produced (OHP).

The use of these alternative forms is a little confusing, but the idea is the same. If a man takes 8 hours to spin 100 lb. of cotton yarn, we may say that his production per manhour is 12.5 lb., or that his operative hours per unit of production are 0.08 (taking 1 lb. of yarn as the unit).

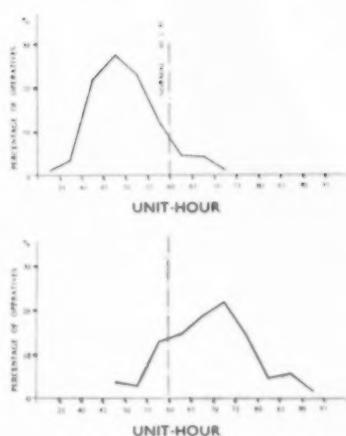
The OHP figure is very simple to work out. The total output of

These graphs show the percentage of card-room operatives achieving a particular rate of output before (above) and after (below) reorganization of a Lancashire mill

the department or factory, expressed in the most convenient unit, is simply divided by the number of hours worked by operatives employed in connection with the operation or process. Direct, indirect and supervisory labour may be included or not, as required.

Thanks largely to the work of the Shirley Institute, OHP figures are now being used regularly as a check on efficiency by a considerable number of cotton spinners and weavers in Lancashire. Nor is this all. The Institute have collected and published comparative OHP figures for a considerable number of Lancashire mills, so that a user of these figures can compare the performance of his own mill not merely with last week's performance of his own mill, but with the performance of other mills in the industry.

The Shirley data are in three sections: one gives OHP figures for all mills surveyed; another figures for the 25 per cent of English mills with the best labour



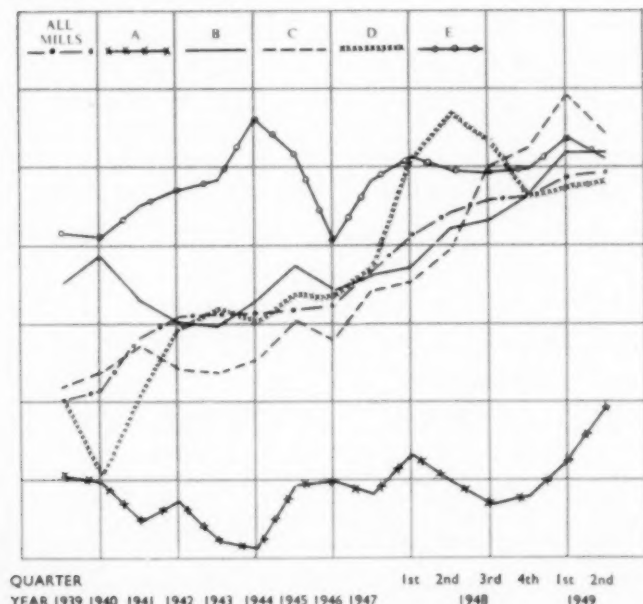
utilization; and the third data for some American spinning mills.

Writing in *Productivity Measurement in British Industry* (A.A.C.P.) H. Moss, of Thos. Taylor and Bro., Ltd., of Wigan, says, "In our mills we find this threefold target of great value in our continuous endeavours for improved efficiency. These process-by-process OHP averages provide an accurate yardstick against which to compare the results of our efforts in productive economy, and enable higher management to assess correctly our current position in relation to the industry as a whole."

These OHP averages are by no means limited to factories producing a single product in comparable units. A comparatively simple transition enables comparisons of labour productivity to be made between conditions at various times in a multi-product factory with a varying flow of work, between different departments in the same factory, or between different factories in the same organization.

Once PMH or OHP figures have been worked out in a given period for an organization, it is easy to set some form of "standard" from such figures against which future performance may be measured. This "standard" may be roughly equal to the actual figures as measured, or may be a target that

INDEX (U.K. Average 1939 = 100)



INDEX

This graph is used by Courtaulds Ltd., to show inter-factory comparisons of labour efficiency in the spinning departments of the company's various factories

The three charts are reproduced from "Productivity Measurement in British Industry" (A.A.C.P.)

it is hoped to reach in the future. But once it has been set, all future performance figures may be related to it by expressing them as a percentage of the standard. A week-by-week or month-by-month sequence of such percentages will then form an index of productivity in the department or factory concerned.

Indices of productivity of this nature are finding expanding use in industry. All are minor variations of the basic formula:—

$$\frac{\text{actual output}}{\text{standard output}} \times 100$$

The use of these indices may be extended to give comparisons of the performance of different workers. Mr. Moss gives an interesting case in which this has been done. In 1948, he classified the workers in his mill, engaged on different tasks, on the basis of their performance against standard, the standard representing the time study department's conception of the "60" for the job—i.e., the amount of work which a normal worker could be expected to do in 60 minutes. On this classification, he was able to construct a frequency curve showing how many workers were actually turning out 35, 45, 50 . . . minutes' work in the hour.

Reorganization and training schemes were then introduced; on their completion, a similar survey was made. The two curves, reproduced on page 45, demonstrate the effectiveness of the reorganization. What is more to the purpose, they enable top management to assess the effectiveness in numerical terms—and to translate these terms into costs.

The versatility of such indices of productivity may be gauged from their use in engineering works, rayon spinning concerns, steelworks, in boot and shoe factories, and cotton mills. Moreover, the system is not only applicable to large or medium-size factories. It is applied in a factory employing as few as 70 people.

(2) Plant Productivity Indices

Valuable as such indices are, however, they have their limitations.

They give management an accurate picture of labour productivity. But labour productivity is by no means the only factor which management has to watch.

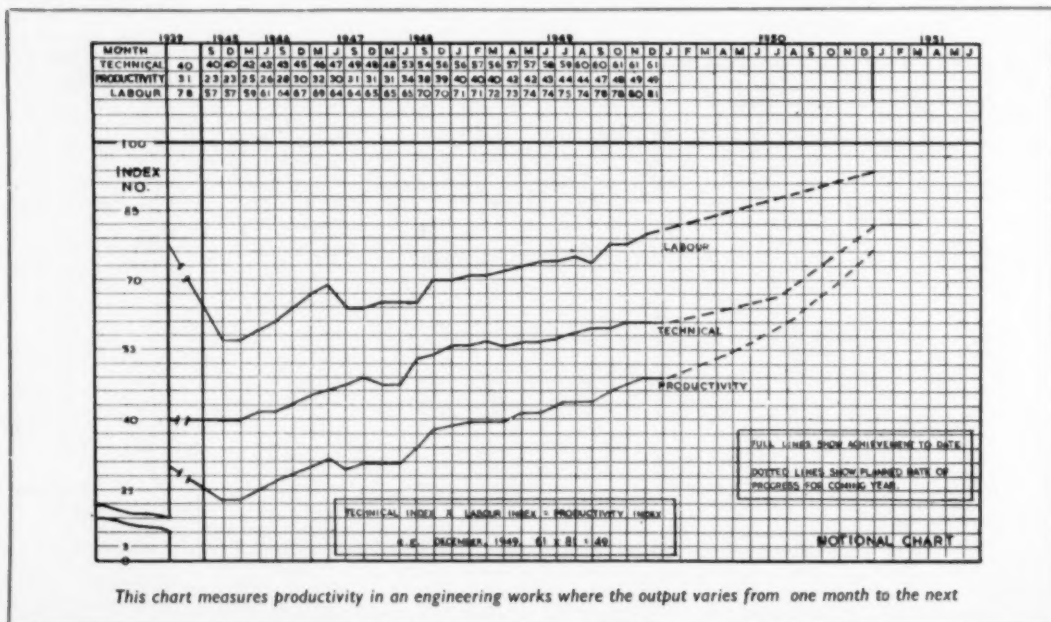
In many industries, good utilization of labour is the key factor in

efficiency. But in others, labour utilization is of minor importance. The proportion of labour costs to total costs is so small that a major economy in labour will have very little effect on total costs.

The point was emphasized in relation to the iron and steel industry by Sir Charles Goodeve, in a paper read to the recent conference of the Institution of Production Engineers. In iron-making, he pointed out, plant costs are about twice labour costs, but in many other processes the labour is the higher component.

Hence, to give a balanced picture of the cost structure, all analyses should give costs both in terms of the rate of consumption of the particular resource (labour, raw material, plant, etc.) and the cost per unit of that resource, in addition to the total money cost. And Sir Charles illustrated his point with the analysis of the cost of making a ton of pig iron, reproduced on page 47, opposite.

Such an analysis gives at a glance the relative importance of the various cost components of a manufacturing process. Where labour costs are proportionately high, the obvious step is to concentrate on labour productivity. But where plant costs represent a major contribution to total costs,



This chart measures productivity in an engineering works where the output varies from one month to the next

it may well be better business to concentrate on getting more out of the plant, even at the expense, if need be, of increasing labour costs.

An attack of this type involves the continual measurement of plant productivity. The construction of a plant productivity index, on identical principles to the labour productivity indices already mentioned, is simple.

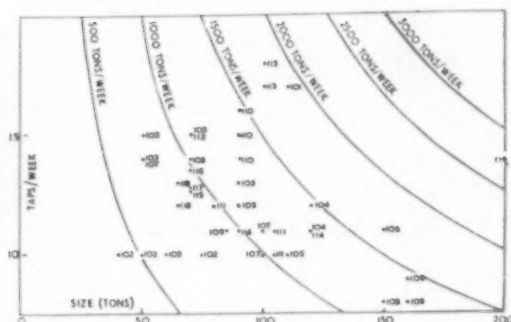
The output of a plant, whether it be blast-furnace, machine tool or loom, depends on two factors—its size, and the rate at which it is operated. For most plants, size is constant, at least between the distant periods of replacement. Hence, indices will reflect intensity of operation. They will, for instance, show the effect of technical changes, and of overtime, double-shift working, etc.

Steel Comparison

Management will therefore be in a position to balance increased costs incurred as a result of these changes against the gain in yield from better plant utilization, and so to secure and keep the optimum balance in the use of all resources, continually adjusting this balance in step with changing outside factors.

The comparison here is primarily with past performance of a given plant, or at best between a small number of plants owned by a single firm. A few enterprising firms have gone a stage farther. In the steel industry, for instance, the joint research association has, for several years, regularly produced and circulated to all producers

Steel works executives can tell at a glance from this chart just how efficiently their furnaces are operating in comparison with those of other firms in the industry



data showing the position of their particular plant in relation to others in industry. At longer intervals, comparisons are made with plants abroad.

The data are presented in the form of a chart, an example of which is reproduced on this page. This is drawn to show the size and driving rate of hot metal fixed furnaces. The product (size \times driving rate) is shown on a curved scale, and each point on the chart represents a furnace or furnaces in an individual melting shop. Each company knows, from its code number, which are its own furnaces, and can see how these stand in relation to the others.

The diagram, of course, does not take into account any variations in the qualities of raw materials and of the products, which seriously affect the refining times in the open hearth furnace and, therefore, the driving rate. But it does provide a competitive stimulus to managers to increase

both the size of their furnaces and the driving rates, and hence their plant productivities.

This type of chart, too, takes no account of idle plant time—a fundamental factor in plant costs. For each plant or machine, it is possible to establish a "theoretical capacity," i.e., the quantity of products that the machine is capable of turning out on the assumption that it is operated at full blast during the whole of the working period, without shut-downs for refuelling, maintenance or accident. It is also possible to determine the "effective capacity" of the machine—its capacity after due allowance has been made for normal shut-downs.

Further Analysis

Thus two more indices can be constructed, one of "utilization" (the ratio of output to effective capacity) and the other of "availability" (the ratio of effective capacity to theoretical capacity). The isolation of these two quantities makes it possible to analyse them further, with the expectation that improvements can be made in both.

Here, then, are a whole battery of tools for the measurement of real costs, independent of fluctuations in prices or in the value of money. Together they constitute a vital first step in the reduction of operating costs within the factory, by giving the top executive a close, accurate and detailed picture of just what his costs are, in terms of man and machine power, at any particular time. They will not, in themselves, reduce his costs—but they will tell him how he can do so, and how successful his efforts are.

ANALYSIS OF COST OF MAKING 1 TON OF PIG IRON

Resource	Consumption Rate	Price	Cost Component
			£ s. d
Raw materials, iron ore, etc.	1.8 tons	£4 10s. per ton	8 2 0
Limestone	0.2 tons	£1 per ton	4 0
Fuel—coke	0.85 tons	£5 per ton	4 5 0
(net gas credit)	(65 therms)	(2.4d. per therm)	(13 0)
Labour-time	3.2 manhours	4s. 6d. per hour	14 6
Furnace-time including over-heads	0.08 hours	£15 per hour	1 4 0
			£13 16 6



A CASE HISTORY IN REORGANIZATION

From Family Business to Scientific Management

By RICHARD LAWRENCE

ALFRED BIRD & SONS, LTD. of Birmingham, are an old-established family concern. Founded in 1837 by Alfred Bird, the firm prospered over the years, and 1939 saw them firmly entrenched as one of the leading manufacturers in the food industry, under the chairmanship of Sir Robert Bird, grandson of the founder.

The war, however, brought them many problems. Supplies of raw materials of the correct quality became very difficult; controls limited output; service demands depleted production and sales staffs. When peace came, prospects for the immediate future seemed little better. Materials were still controlled and scarce, and it was obvious that recovery was going to be a slow process for any firm in the food industry.

Even worse were the prospects of another organization in the industry — the Grape-Nuts Co. Ltd., of London, founded in 1908 to distribute in Great Britain the food products packed by General Foods Corporation in the United States and Canada. The shipping position during the war had led to the complete suspension of imports of General Foods products, and the post-war dollar shortage promised to prolong this suspension indefinitely.

The only alternative was the production of *Grape-Nuts* and allied products in Britain. But to build and equip a new factory in

Expansion and growth are part of the life of any successful business. But growth brings ticklish problems in management control, particularly when the organization gets too big for one man to handle alone. Here is the story of how one firm solved these problems.

the immediate post-war years would have been difficult, if not impossible. So General Foods looked round for an established British concern with manufacturing capacity to spare.

In due course, they found Bird's. An agreement was signed between the two firms, and Bird's started manufacturing and distributing *Grape-Nuts*, and, later other products of the General Foods range. In 1947, the marriage of the two firms was finally consummated in a full amalgamation, and Bird's became a member of the General Foods group.

Simple Structure

All these changes naturally brought many management problems. The way in which they were solved presents an interesting case-history in the transition from the strongly personal control traditionally employed in a family business to the more complex organization normally associated with "scientific management."

Under the previous regime, the organizational structure of Bird's

was simple. At the head was the chairman and managing director. Under him were two general managers, in charge of production and sales respectively, and an accountant, who had charge of the office. And under each of these were a number of supervisors, salesmen and clerks respectively. There was little "middle management" and no personnel department.

With a limited range of products and a comparatively stable output, this structure worked satisfactorily, but the advent of *Grape-Nuts* and other products brought an increase in activity and in the labour-force. This, in turn, increased the burden on top management—both in scale and in complexity. The span of control, for instance, expanded to such an extent that one executive had as many as 35 subordinates reporting to him.

This state of affairs, obviously, could not continue. A major structural change was made. The firm was divided into five divisions—buying, works, sales accounts and personnel—each division in

charge of an executive answerable only to the managing director. The major innovation was the introduction of "personnel" as a separate function, and the first task of the new personnel manager was to sort out, in conjunction with the various people affected, the detailed changes involved in the revision.

Chart Came First

The initial step in this process was the construction of a detailed organization chart, showing the position held by each supervisor in the organization, his function, to whom he answered, and who answered to him. The elaboration of this chart was a long-term affair, involving many months of patient interview and discussion between personnel manager and individual supervisors. During this time, various anomalies and ambiguities were revealed, and, by further discussion, resolved. Finally, the chart was completed to the satisfaction of all concerned. Today, copies are permanently exhibited in all departments. Any member of the firm thus knows, or can rapidly discover, what exactly is his own position and that of any other individual in the firm.

The discussions in relation to the organization chart had not only revealed uncertainties as to status; they had also shown similar

uncertainties as to company practice. So the next step was the consolidation of administrative practices into concrete form.

A draft version of a statement of "the principles of employee relations and personnel administration in Alfred Bird & Sons, Ltd.," was prepared by the personnel manager, in consultation with top management, and a mimeographed copy given to every supervisor. A series of meetings of groups of supervisors was then held, with the managing director in the chair, at which the draft was analysed and discussed exhaustively. As a result of these meetings, some twelve amendments were made in the draft, which was then printed in booklet form and distributed to all workers and staff.

Next, another booklet, *Working Together*, was prepared, setting out for the new worker just what he might expect from his employment, and covering details from the history of the firm to canteen and welfare facilities, safety rules, etc. A hundred proof copies of this were run off and circulated, not merely to interested parties

within the firm, but also to outside experts such as lawyers and the Industrial Welfare Society, before the final version was agreed and issued.

Once the foundation of the new organization had been laid, the personnel department was able to concentrate on the improvement and expansion of welfare arrangements. Pension and life insurance schemes, a sickness benefit scheme, termination allowances and a thrift scheme were introduced or expanded. Recreation rooms, a library, and facilities for a sports and social club run by a workers' committee followed.

Detailed Manual

Finally, a more detailed "supervisors' manual," putting into print the recognized rules of procedure for various eventualities, together with such matters as details of the basis of holiday and overtime payments and job rates, has been developed and put in the hands of every supervisor.

The work on the organization chart, in addition to anomalies,

How Management Was Organized

I BEFORE EXPANSION



SPREADING THE LOAD: At-a-glance contrast between the management structure before and after reorganization. The second "tree" is printed in Bird's handbook for employees, "Working Together".

2 AFTER EXPANSION



had revealed certain gaps, particularly in the field of "middle management." It had already been accepted as a principle by management that promotion should, wherever possible, be from within. But the inevitable corollary was a training programme to ensure fitness for promotion.

At the operative level, training at Bird's offered certain difficulties, due to the fact that few skills are used. Certain specialists—chemists, maintenance engineers, etc.—are employed, but the proportion is so small that internal training facilities would be uneconomic. But, for the average process worker, the skill involved is such that it can be acquired in a matter of days on the shop floor, and no vocational training will offer any serious prospect of improvement. Hence, while Bird's have offered generous facilities to any operative wishing to undertake further education outside the plant, they have not made any internal training arrangements.

Training Supervisors

At supervisor level, however, the picture is different. The supervisor's job at Bird's is very substantially concerned with human relations, and, for that reason, every effort has been made to interest supervisors in training in human relations subjects. Every supervisor, for instance, has in the past few years gone through at least one T.W.I. course.

Every supervisor is encouraged to take an active part in conferences and other outside activities that will broaden his outlook. A special week-end conference was organized by the Institute of Industrial Supervisors for Bird's at Ashorne Hill, attendance at which was restricted to Bird's supervisors in the Works Division. In addition to the normal course, talks were given by Bird's own executives on problems peculiar to the organization, and the proceedings ended with a "free-for-all" session, at which questions on any subject were invited and answered by the managing director. The conference proved so successful that a repeat is scheduled for this autumn.

The trainee system has also been introduced at Bird's on a limited scale. Young men have been drawn from both secondary schools and the universities to undergo a

REORGANIZING (I)

Morale



All workers must know "where they are". Here are two of the attractively-produced publications which every new employee receives.

training course taking them through all sections of the organization for a period of between 18 months and three years. The course is specially tailored for each individual trainee. Apart from work in every aspect of the business, it includes attendance at outside residential courses of a suitable nature which become available from time to time at educational establishments catering for foremanship training and the like. Upon the conclusion of their training, these men, if they prove satisfactory, will be appointed to suitable junior supervisory vacancies. This scheme, however, is essentially of a long-term character, and has not yet been in operation long enough for its value to be assessed.

Production Angle

Thus, on the personnel side, Bird's have successfully adapted their structure to changed conditions, tidied up their organization, filled the gaps, and laid the foundation for future management. In the meantime, the other new divisions were also busy setting their houses in order after the change of structure.

In the works division, for instance, considerable headway has been made in increasing output and efficiency. A complete new factory has been acquired and equipped, on a site a stone's throw from the old, to house the production lines for the new products. At the original factory, where production is concentrated on the

original lines of custard and blanc-mange and jellies, increased output has been obtained by more intensive mechanization, both of process and handling equipment, and by the introduction of work study and work simplification techniques.

A full-time industrial engineer was appointed by the works director, with a time study engineer and three assistants working to him. A stage-by-stage analysis of all processes on the main production lines was carried out. As a result, considerable changes were made in layout to streamline production and eliminate waste movement. Time studies were also carried out, and production schedules checked against standard times to secure a better balance of output. Then, when sufficient time studies were available, the problem of payment was tackled.

Wages Policy

Wages in the food industry are covered by national agreement, and Bird's have always, as a matter of course, honoured the agreement so far as minimum wages are concerned. But their average rates have been higher than the national level, and for many years they have also paid a bonus on output. In the past, this

bonus was on a group basis, with a target set for a whole department or a whole category of workers. The introduction of time study made it possible to itemise targets more closely and more accurately, and to put the bonus on an individual basis, or at least on the basis of a small co-ordinated team.

The first stage in the revision of payments was the introduction of a simplified form of job evaluation for hourly rated jobs, on a

supervisor, who in turn had to "sell" them to his worker. No change was made until all concerned had been convinced that it would be to their benefit.

With all this ferment of reorganization in the divisions, the task of top management became highly complex. It was simplified by a deliberate policy of decentralization of responsibility, based on and facilitated by a drastic reorganization and extension of budgetary and cost control.

Budgetary control had been used for some years by Bird's, but the budget had been a single one for the business as a whole. Now each division, and each department within a division, prepares a series of budgets of its own for the

Such a control system would be impossible without adequate costing. Hence the costing system used has been expanded and made more accurate, so that the accounts department is now in a position to identify the true cost at any time of any single product item or item of equipment, and to discern rapidly any changes in such costs.

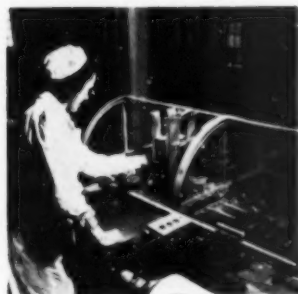
Continual Adaptation

The story is thus one of continual adaptation to changing conditions. How successful have these changes been? The answer is a little difficult to make. Bird's are still a private company, engaged in a highly competitive trade. Their sales, cost and profits figures are very much their own concern, and they are understandably reticent about them, but they will claim with some pride that in the last few years total output has expanded, while the number of workers has grown in a much smaller proportion. Other things being equal, that suggests increased efficiency.

Of the success of their personnel programme there can be little doubt. It is shown concretely by the drop in labour turnover—from 75 per cent. in 1950 to 46 per cent. in 1951 and 32 per cent. in 1952. If a happy firm is a prosperous firm, then Bird's are indeed doing well.

REORGANIZING (2)

Material



Output was increased by mechanization. Above, a wrapping machine; on the right, filling apparatus.



points basis. Every job was discussed with the operative or operatives affected, his supervisor, the industrial engineer and the organization and methods adviser. These discussions revealed, as was expected, that certain anomalies had grown up over the years. These were removed—in most cases, by increasing the rate for certain jobs, while holding other rates unchanged. No rate was reduced.

Wherever possible, individual targets were set from standard times obtained from time study, and the bonus paid in proportion to saved time. This was possible for about 10 per cent. of all workers. Of the remainder, a considerable number worked in teams of two or three, and a team bonus, again based on standard times, was introduced in place of the over-all departmental bonus.

The key factor here was the industrial engineer, who had to "sell" the proposed changes to the

coming four quarters of the year. The budget for the first quarter is a final budget, those for the following three quarters progressively provisional. After the lapse of three months, the original provisional budget for the second quarter becomes (with any necessary amendments) the final budget for that quarter, the original estimates for the third and fourth quarter move up a place, and a new provisional estimate is made for the next fourth quarter.

Departments are thus continually budgeting (provisionally at least), twelve months in advance of their requirements. Departmental budgets are consolidated into divisional budgets, which in turn are consolidated into a single budget for the company as a whole. Since the budgets include those of expected sales, from the sales department, the final document is, in effect, an anticipated profit and loss account for the twelve months to come.

REORGANIZING (3)

Welfare



Improvement and expansion of welfare arrangements kept pace. Here is the modern surgery.

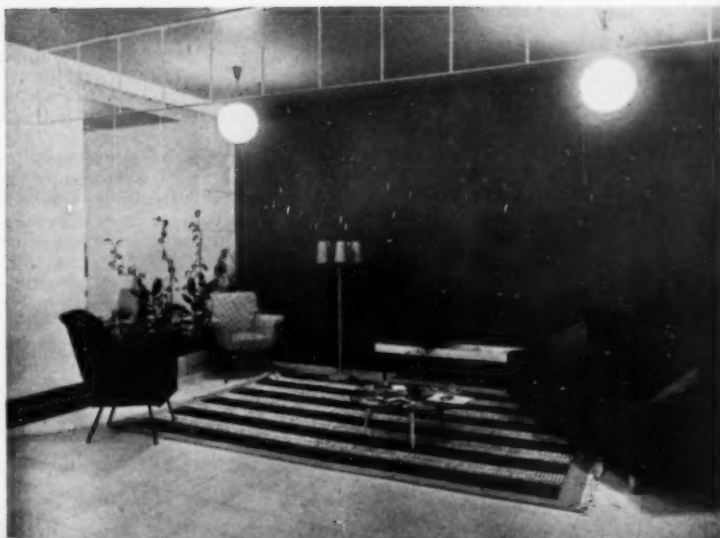
The days when a car could be placed in a showroom with a card marked "sold" on it are gone; the need for selling has returned. To sell successfully, you not only require a saleable product and salesmen, but also the right atmosphere. In their new export showroom in Berkeley Square, the Standard Motor Company, Ltd., have concentrated on getting this atmosphere as well as providing an attractive setting for their cars. The result is practical yet inviting and colourful without being theatrical.

Separated by glass panels from the showroom is the sales staff office. Here, salesmen can write without interruption, telephone without being overheard and keep the showroom under observation. Latter point eliminates "hanging about" in the showroom. Raised glass top of the two seater desk is secured by rubber suction cups.



2 This reception office is normally used by visitors to the directors. They can wait here in comfort before being taken to the upstairs offices. Staircase is behind the camera, door at the end of the room leads into the sales staff office. Spaciousness avoids any feeling of overcrowding and unintentional eavesdropping.

3 A large area of the basement beneath the showroom has been turned into the export reception room. Here is one of the furnished bays, of which there are several. Bays enable customers to be dealt with apart from one another; confidential conversations cannot be overheard. Furniture, lighting, decoration and controlled temperature are all conducive to comfort—and selling.



Setting the Scene for SELLING



4 Five-sided table at one end of the export reception room was specially designed to simplify the completion of documents. Racks hold the various forms which the overseas buyer has to complete. Curtains give the impression of windows; telephone switchboard is located behind the bamboo "wall".



5 This department on the first floor is for the secretaries of directors whose offices adjoin it. There are offices for the managing director, export sales manager, home sales manager and there is also a visiting director's office. As visitors have to pass the department to reach any of these executive offices, the same attention was paid to its decoration as to other parts of the building. Filing cabinets are standard steel units mounted in wood frames; custom built desks feature revolving typewriter drawers.



6 Decorative treatment of the executive's offices varies, but all are contemporary in style and this one—the export sales manager's—is typical. The desk is cedar wood with a curved top and cane lattice facing panels. Telephones are on a separate table—keeping the desk top clear yet near enough for convenience. Map on the right is hand painted and shows assembly plants, distributors, agents, dealers and shipping routes.

Photographed for **BUSINESS** by
F. Dunscombe Honiball, A.R.P.S.

How We Train Our Salesmen (3)

Our Training Formula

Careful selection; thorough basic training, using simple but time-tested teaching methods; continual training on the job; and further training at all stages of promotion—these are the principal points in the Hoover policy for training salesmen.

WE in Hoover Ltd. believe that training is a prime essential for both company and individual development. We also believe that a sales organization cannot be truly successful or efficient unless its entire sales staff is trained thoroughly.

Before training comes selection. Each candidate who applies for training as a Hoover sales-service representative is first interviewed by the district sales manager in his area. He is carefully assessed and must have good conversational ability, first-class appearance, mechanical aptitude, and a high standard of education.

No one type of individual is selected. Men may come from other firms, the forces, or be university graduates. There is, however, one common denominator we look for—moral fibre, the quality so much sought during the war.

Instructors Decide

After selection by the district sales manager, the candidate is seen by the branch manager. But even a favourable recommendation from him is not the last word; the final decision on a man's suitability rests with the two instructors at whichever training school he attends. A considerable amount of care has, therefore, been expended on the selection of the applicant, even before he commences his training.

Candidates chosen are trained as sales-service representatives. This means that they must not

only be able to sell, but also to service, any of our products. In addition to the current models of cleaners, washers and a polisher, there are over 30 different types of cleaner still in use which we have marketed during the past 34 years, and the representative must be able to tackle any fault in any of these machines as well.

The training course lasts five weeks and can be split up into three parts:—

1—Technical. Instruction on the service side of his work and basic instruction on electricity.

2—Salesmanship. The fundamental principles of selling.

3—Ancillary Subjects. These include things that have some connection with the use of the product, such as carpets, fabrics, soaps and detergents.

THOROUGH CONTINUOUS PROGRESSIVE

By R. T. GRIFFITHS

*Sales Personnel Manager, Hoover Ltd.
in an interview with ROBERT SPARK*

In addition to the subjects above, trainees are given background information on the company and are shown the organizational set-up at Hoover Ltd. Where possible, they are taken round the Perivale works or one of our other plants. They also see a colour film on the manufacture of the Hoover cleaner; but we avoid going into too much detail upon "background knowledge" at this stage, as it is likely to confuse and clutter up the student's mind.

We do not make use of any novel methods or "gimmicks" and training is based on the time-tested principle of teaching—tell them, show them, and have them do it—again and again. Weekly examinations are held and there is a final examination, but the

THE RIGHT MAN? Applicant's first interview is with the district manager





trainee is not judged by these tests alone. Other things are taken into account—for instance, as well as having brains, a man must be a good mixer.

During the five weeks' course, trainees receive their basic salary. Hotel accommodation is also provided, together with travelling costs between trainees' homes and the school, and their hotels and the school.

His Home Area

The successful trainee, on completion of the course, returns to the district where he was first interviewed, which means that he works in the area where he has lived and is known. It enables him to adapt himself to local requirements—and we attach considerable importance to this. A man who is a member of the local community has a better chance of selling our products than a complete stranger.

Before actually starting in his territory, the new representative is given a further two weeks' training under the local junior manager, who guides him through the transition stage from graduate to fully-fledged representative. He also learns the administrative and clerical aspect of his job during these two weeks.

Training does not end here, as the junior manager holds an afternoon and evening session with his representatives once a fortnight. This ensures that representatives are kept up to standard and checks the development of any faults or shortcomings.

Beside the form of selection and training for sales-service representatives which I have already

NOW YOU DO IT: Technical training at this Hoover school is practical

outlined, Hoover Ltd. also have a business trainee scheme. Under this scheme, boys come to the company at ages varying from 15½ to 17, from secondary modern, grammar and public schools.

Selection of prospective trainees is by a preliminary interview of the boy and his parents by the district sales manager. The approval interview is conducted by the Hoover branch manager.

If accepted, the boy undergoes a pre-military training course covering office administration, technical instruction and stores administration. He also attends one of the five-week courses at a sales-service school and spends two months in the field accompanying a representative upon his normal field duties. In addition, he must do a minimum of ten hours' work a week at a day school, evening classes, technical college or through a correspondence course. The boys are under the direct supervision of the district manager who reports to me on their progress every three months.

Keeping Contact

Before a boy leaves for national service, I see him and advise him on the type of study and vocational training he should follow during his period of military training. While he is in the forces, I maintain personal contact with him and, where possible, visit him at his service station.

When the trainee leaves the services, he is seen by the branch

manager and a decision is made as to his future career in the sales-service organization. It may be in the technical branch, the field branch (that is, both home and export selling) or the administrative branch. He then has a further year's training in one of these sections of the organization, finally emerging at 21 as a fully-fledged member of the Hoover team.

Management Courses

At this stage, he is able to take over his own territory in the field or his responsibilities in the office or workshop, earning a good salary and with very good prospects. I personally think the business trainee has a unique opportunity to make a successful career.

When representatives are thoroughly experienced, they may be selected for the Hoover junior management course if they appear to have the right leadership qualities. If approved, the represent-



GRADUATE: Training is over. Now he does the explaining—to the customer

ative attends a potential junior management course of instruction.

As the name implies, the course deals chiefly with management subjects and the men are given management problems to tackle. The course is intensive and after written, practical and oral tests, each man is graded into one of three categories:—

A—ready for promotion.

B—not quite ready for promotion and requires further training.

C—not suitable at this stage. Candidates who are graded

"C" are not barred from trying again at some future date. Those who receive an "A" grading are not necessarily promoted immediately, but go to make up a "pool" of men who are ready to fill junior manager vacancies as and when required. While awaiting promotion, they are naturally even better equipped to carry out their representative duties.

From outstanding junior managers we choose candidates for instructors' courses, and many, after confirmation as instructors, qualify for a district management course. From district managers,

candidates are selected for the coveted post of branch manager. But all stages of promotion are marked by further training and examinations.

Passing it on

In the same way, when we introduce new products, I, with my sales and technical training managers, train the branch managers, and they in turn instruct the district managers. The latter instruct the junior managers, who are responsible for training the representatives.

How We Get Good Salesmen — and Keep Them

By Lt.-Col. MAURICE W. BATCHELOR, J.P.,
Chairman, Batchelors Peas, Ltd.,
in an interview with JOHN BROADBENT

WE started to tackle the problem of training salesmen in 1949 when we could foresee a return to more normal trading conditions, so that when we had to start selling our goods instead of allocating them we had trained men to do it.

There were two problems to be dealt with. First was to recruit new men for our sales force, second, to re-train our existing sales staff.

Since we returned to normal trading conditions, our business has expanded rapidly. This, coupled with the trend towards more direct selling to retailers, has meant that we have needed quite a number of new salesmen and these have had to be recruited and trained.

My firm belief is that a salesman's make-up is 30 per cent personality, 20 per cent salesman-

ship and 50 per cent enthusiasm. Enthusiasm is essential, whereas you can always teach salesmanship. We also look for the man who will stay with us and who is loyal, so we do not recruit the speciality salesman.

I have mentioned the qualities we look for. The next question is: How do we get them?

There is no cut-and-dried answer; selection is purely individual. Either you have the ability to pick the right people or you have not. The men responsi-

ble for selecting our new salesmen have this quality.

This may appear to be unscientific and not in accord with some present-day ideas on personnel selection. But our results are very satisfactory; it is rarely that we lose a salesman—only two have left this year and they had good personal reasons—and our sales staff turnover is less than one per cent. If you have selected the right men, trained them correctly and looked after them, you will invariably find that they will stay with the firm and give it many years of loyal service.

The normal process for getting recruits is to advertise in the area where they are required. All applicants are then interviewed by the area manager who puts likely candidates on his short list. People on the short list are then seen by the general sales manager, who makes the final selection.

Starts in the Field

The new recruit starts his sales career with Batchelors by going into the field as a dealer service man. In this job he goes round to the retail stockists of our products and distributes and arranges display material such as window pelmets and window bills.

There are two advantages in this arrangement. First, it gives the newcomer time to get accustomed to the general atmosphere of the job he will eventually do and to meet and talk with the people to whom he will eventually sell. Secondly, it provides the management with an opportunity to watch how the new man is tackling his work—in fact, we treat this as a probationary period. The dealer service scheme is essentially the nursery for our future sales staff.

After approximately six months as a dealer service man, the new recruit will undergo his two weeks' training at our sales school. The course, while providing plenty of background information on the company's activities, concentrates

Careful selection, practical training, and management guidance and support after "graduation" are the guiding lines of Batchelors' training programme. In their men they look primarily for enthusiasm and personality.

on practical selling and knowledge of our products.

I personally open each course with a 15-minute talk. My executives also give talks on various aspects of the work of their departments. These include marketing, sales organization, production, advertising, market and consumer research and administration. Beside the lectures on selling and products, there are others dealing with standard practice, dealer service, care and maintenance of motor vehicles and the handling of trade and consumer complaints. "General knowledge" of the firm is provided by visits to the factory (both production and administrative departments), a talk on the history of Batchelors and the showing of our film, "Quality Control."

The best way for the student to learn how to sell is to practise selling, and for this purpose we have a complete "shop" erected permanently in the lecture room. Here the trainees can practise selling, weak points can be corrected and they can be shown the best way to approach and handle the prospective customer.

We also believe that it is essential for the salesman to be fully conversant with all our products and to understand clearly the attitude and methods of the company. We encourage trainees to ask questions—any questions—and we make a point of giving them straight, candid answers. If the



DUMMY RUN : A student practises the gentle art of obtaining an order in the dummy shop

new man wants to know why, we tell him — it builds up confidence in the organization.

After the training course has been completed, the next step is for the man to return to his area and go into the field as an "introducer" salesman. The introducer salesman calls on retail outlets who do not buy direct from Batchelors and books orders for delivery from wholesalers. This is a way of proving to wholesalers that there is extra business to be done with Batchelors' products.

After a period of about six months as an "introducer" sales-

man, he becomes a fully-fledged salesman and has his own territory to look after. The six months as an introducer salesman is, in a sense, a second period of probation and it gives us a further chance of watching the man in action before he becomes a permanent member of the sales team.

The normal pattern, therefore, after a man has been selected is to give him six months with "dealer service," during which he does not have to sell; a two weeks' sales training course; a further six months as an introducer salesman, then — providing he has proved satisfactory—for him to join the permanent sales force as a representative with his own territory.

For the purpose of re-training, the existing sales force could be sub-divided into the younger men who had never known the competitive conditions of pre-war days and the older and more experienced salesmen.

The younger men underwent the two-week sales course at Sheffield. After this, we dealt with the older men. They had to be handled more tactfully. With them, we took the line that "this is what we have taught the younger men" rather than "this is what you have to learn." Believing that one is never too old to learn, we have also run special briefing courses for area managers. The object of these was to put the managers "in the picture" by running through the courses given to the men who work under them.

CONCENTRATION : Lecture session at the Batchelor school for salesmen — "shop" in the background



Director's Office of the Month



I. J. O'HEA, F.C.I.S.

Chairman, Colt Ventilation Ltd.

THE office shown above belongs to I. J. O'Hea, F.C.I.S., chairman and managing director of Colt Ventilation, Ltd., the industrial ventilation engineers, and W. H. Colt (London), Ltd., manufacturers of the *Colt* chimney cowl and specialists in Canadian cedarwood roofing shingles and *Colterro* clay lath.

Designed by architect Frederick Barber, M.B.E., F.R.I.B.A., and furnished by Story & Co., Ltd., this room—large and high-ceilinged, with a southern aspect—could have presented a problem in less experienced hands.

The room is gracefully subdued in tone. The predominating colour is the grey of the plain Indian carpet which covers the whole floor, and the grey of the Regency striped wallpaper which is picked up again in the reeded glass door.

A contrasting note of colour is struck in the acid-yellow tapestry curtains from floor to ceiling over the long windows, which overlook a superb garden with spreading lawns and ancient trees.

FURNITURE is of warm-toned cherry wood, set in a slightly darker surround of blackbeanwood, and is unobtrusively modern in design. One wall of the room is occupied by a sideboard unit consisting of cupboards and drawers and a cocktail cabinet, surmounted with a line of glazed

bookshelves along its entire length. Mr. O'Hea's desk and the conference table were specially designed in blackbean wood to match.

On the glass top of the desk rests a dictating machine. Out of sight in the knee recess is the telephone extension for outside calls, and the buzzer which connects to Mr. O'Hea's secretary's room. The inter-departmental telephone rests on a special cabinet containing sliding trays to take papers for various executives.

OTHER furniture in the room includes a wardrobe and a filing cabinet. The cabinet is particularly interesting because it is a standard metal unit, but enclosed in a special blackbeanwood case to match the rest of the furniture. Mr. O'Hea's chair is covered in green hide and is of the swivel type.

The "Colt" theme in this room is gently picked up with a few well-chosen hand-made pottery colts, and plates decorated with young horses; and the pictures, which are framed in cherry wood to match the furniture, include a frisky young colt and a photograph of the company's own "Auster" aircraft in flight. Several carved Indian figures and panels are native-made from the Canadian red cedarwood of the roofing shingles sold by the company.

F. J. FIELDING
Managing director
Heenan and Froude



Head of a nine-company empire selling products as varied as jet engine test beds and refuse destroyers, F. J. Fielding, managing director of the Heenan and Froude group, has one touchstone for success in today's competitive export market. His products must have more brains in their design and production than those of his competitors. Here is the story of what this policy means in practice.

He Builds Brain Power

BRITISH exports are doomed, say the pessimists, partly because the traditional importers of British goods are themselves now rapidly becoming industrialized, partly because renascent German and Japanese competition is pricing British goods out of the international market.

But progressive industrialists dismiss this pessimism as nonsense. Among such men may be numbered F. J. Fielding, 45-year-old managing director of the Heenan and Froude group of engineering concerns.

Britain's traditional exports may well be doomed by world industrialization, argues Mr. Fielding. But the answer lies in the development of new and better products to export. If Britain can no longer export cotton yarn, she can export the new synthetic fibres. If she cannot find overseas markets for simple prime movers, she can export gas turbine engines and complicated electricity generating plant.

In fact, what Britain can export, to-day and to-morrow, is what she has always exported—brains. So long as the brain-content of any British product is higher than that of a competing product from

Into His Exports

By JULIAN ACOMB

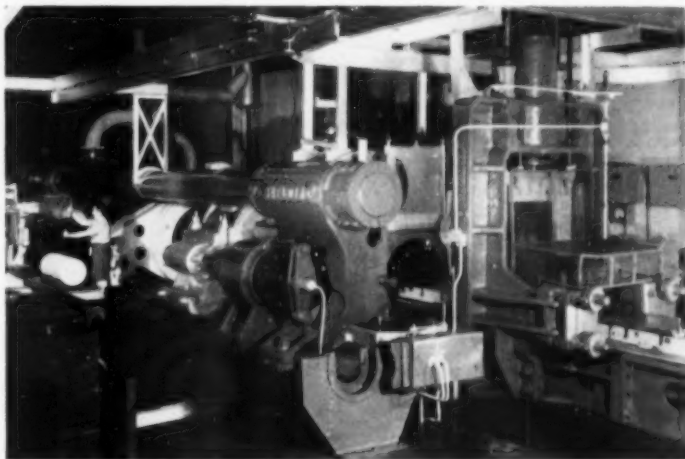
another country, it will command a willing market.

Such is the policy that lies behind the development of the Heenan and Froude group. The increasing success of the group in the export field is sufficient testimony to its truth. One company alone has exported equipment to the value of £2m. in the last few years.

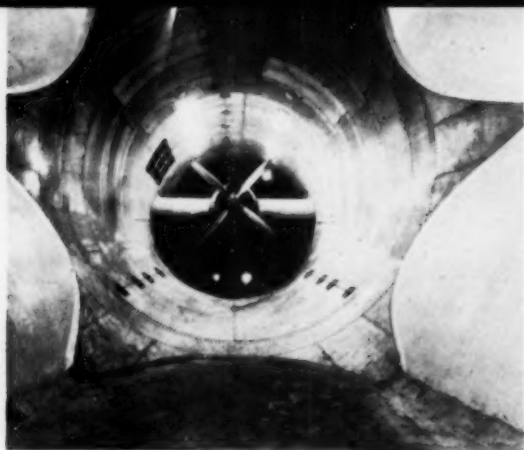
The group itself is of compara-

tively recent formation, but each constituent company is of considerable standing in its own field. The genesis of the group dates back to 1880, when Hammersley Heenan, a retired East Indian railway engineer, bought a small works in Manchester. The following year, he took into partnership a former colleague in India, R. H. Hurrell Froude.

Mr. Froude was the son of



WORLD'S BIGGEST: This 8,000-ton extrusion press built by Fielding and Platt, Ltd., for the Northern Aluminium Company is the largest of its type in the world



GALE PLUS: This Heenan and Froude stationary wing test tunnel is used by De Havilland Aircraft for work upon propellers

William Froude, one of the best-known scientists and engineers of his generation who, while working for the Admiralty, invented the Froude hydraulic dynamometer, a machine for measuring the power of engines. His son brought all the details of the machine with him when he joined the new firm.

In its early days, the firm specialized in building bridges and other steel structures. A permanent memento of this early work is the Blackpool Tower.

The Mainstay

By the time the firm had become a company in 1902, the Froude dynamometer was established as its mainstay and, to cope with increasing demand, headquarters were moved to the present site at Worcester.

The constructional steel works side became of diminishing importance and was sold in 1935, but another early speciality, the design and supply of large municipal refuse disposal plant, continued to flourish. The company has long been the world's leading maker of such equipment, responsible for installations in London, Glasgow, New York, Paris, Brussels and many other great cities.

Expansions in recent years included the purchase of a similar Worcestershire refuse-destroying business, the New Destructor Co., Ltd.

In an obviously similar field was Industrial Waste Eliminators, acquired in 1945, complete with a subsidiary which made abattoir equipment. This company have had great success since the war in supplying equipment to the Rhodesias, Nyasaland and other

meat-producing areas of the world.

From the problem of destroying refuse to that of converting it into something useful is a natural step. It led to Heenan and Froude taking a majority interest in Hyganic Developments, Ltd., which converts town refuse into fertilizer.

In the engineering field, Heenan and Froude's policy of expansion began with the purchase of Court Works, Ltd., specialist iron foundries, of Madeley, Shropshire.

In 1949, Heenan and Froude bought the entire capital of Associated Locomotive Equipment, Ltd., of Worcester, steam-engine specialists—a firm with which they had had close financial and manufacturing links for some years.

This acquisition followed closely that of W. G. Bagnall, Ltd., the Stafford railway engineers, who have produced more than 3,000 locomotives during the 77 years of their existence.

Specialist Firms

Latest acquisition was the Morton Machine Company of Wishaw, the first Scottish company to join the group. Morton's have made machinery for the bakery industry since 1866.

Even this imposing catalogue has omitted one of the most important companies in the group—Fielding and Platt, famed Gloucester firm of hydraulic engineers, which has contributed not only engineering strength, but the group's managing director.

Heenan and Froude is typical in many ways of that class of British engineers who, although little known to the general public,

have an international reputation in their individual spheres. They concentrate on a few lines, each of which is highly specialized, and in these fields they are known throughout the world.

Dynamometers — machines which absorb and measure the power of all types of engines—are a case in point. Heenan and Froude dynamometers are found in engine test-houses all over the world.

During the last war, Heenan and Froude equipped the test sections of the great majority of the vast shadow factories established to produce vehicle and aircraft power plants. It has been estimated that 98 per cent. of British-made engines supplied to the R.A.F. and Dominion air forces were tested by Heenan and Froude equipment.

Fine Limits

For the re-armament and expansion programmes alone, the firm supplied some 250 such plants, complete with all auxiliary plant and accessories.

Now the firm are supplying jet test plants to factories making the Rolls Royce Avon, the engine which powers the Hunter, Swift, Valiant, Canberra and Comet (Marks II and III). The thrust obtained from modern jet engines is so great that exceptionally high accuracy of reading is essential. With the plant now being supplied, no error exceeds one-tenth of 1 per cent. at maximum load. The need for such test plant is apparent when one realises that every engine must be tested individually, to rigorous standards, before it leaves the ground.

First Contract

This contract represents a landmark, as it is the first occasion on which a bulk order has been placed with a single firm for jet-engine test plant "lock, stock and barrel." Further, the Heenan jet-engine thrust cradles in use for Avons are equally suitable for the Bristol Olympus, de Havilland Ghost and Goblin, and Armstrong-Siddeley Sapphire, as well as even more powerful engines of the future.

Other products of the group also tend to hide their light under a bushel. The diesel engines which

this country produces in such large numbers for home and export markets are often cooled by Heenan water-coolers. Many of the articles in commonest use, such as paper-clips, nails, staples, electrical switch parts and radio components, are produced on Heenan automatic machines. Many of the huge turbo-alternators in our power stations are cooled by Heenan air coolers, which also find their place in such plant as the new rolling mills of the Steel Company of Wales.

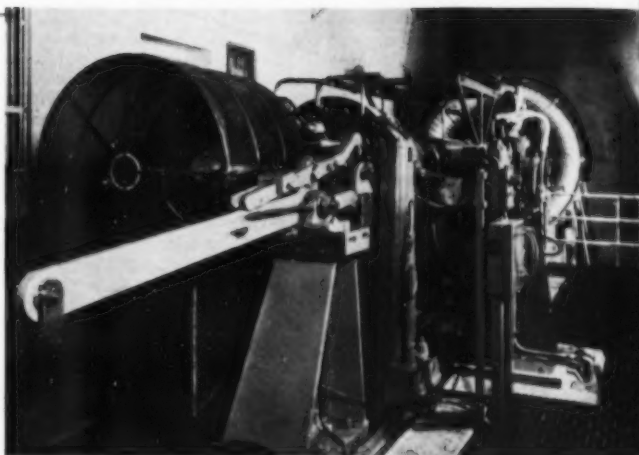
Textile machines, assembly-conveyors in motor car and tractor factories, overhead cranes, and many other machines are frequently driven by Heenan variable-speed couplings. Many other examples could be cited.

How does Mr. Fielding ensure that the brain content of all these disparate products remains high? He will give you five answers:

- 1—good selection of personnel;
- 2—intensive training methods;
- 3—promotion from within—at an early age;
- 4—payment by results—even of highly skilled workers, and
- 5—good industrial relations.

And of these the most important, in his view, are the proper

AIR-POWER :
Measurement of high power outputs with extreme accuracy is the duty of this Heenan and Froude test plant for Avon jet engines at a Standard Motor Company plant



selection of personnel and good industrial relations in the works. Heenan and Froude have a personnel department—but it is a department with a difference.

In Mr. Fielding's view, the selection of men is an art rather than a science. So for one of his personnel managers he chose a man whose background was Eton and the Brigade of Guards—and has never regretted his choice. This

man, straight from the Army, too; a course in personnel management, but his original appointment was solely on the basis of character rather than academic attainments.

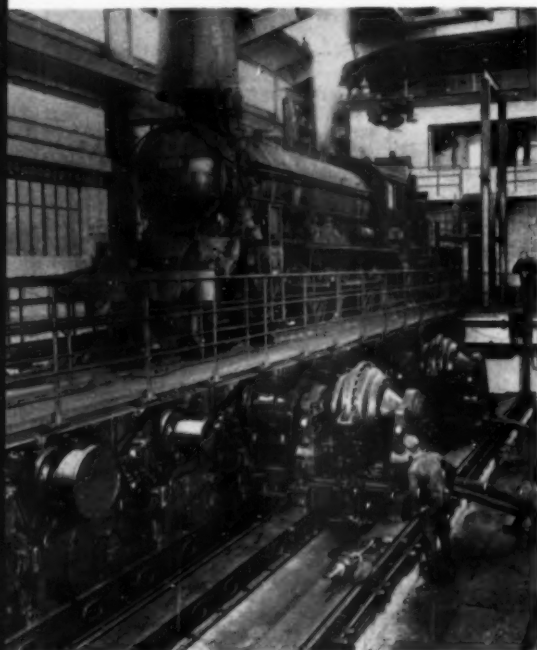
All appointments to senior management posts are handled by Mr. Fielding himself. "It is the hardest job that a managing director has," he confesses. "The secret is to catch them young, and that means that you are bound to make mistakes. If ten per cent. of my geese turn out to be swans, I think I am doing well."

Intensive Training

Training is intensive, but is limited almost completely to in-plant training. This is not due to any particular opinion as to the demerits of outside training facilities, but simply results from the high degree of specialization in the companies. There is, for instance, simply no place in which a youngster nearing the end of his apprenticeship training can get advanced instruction in hydraulic engineering, except in Fielding and Platt's and a handful of other firms. So the Heenan and Froude group run their own apprenticeship schemes, with the instruction almost wholly carried out by their own staff.

Even on the management side, the same conditions prevail. A man who is selling jet test plants needs a degree of technical knowledge that he can only gain by working through an apprentice-

LAND-POWER :
Locomotive test plant designed, manufactured and installed by Heenan and Froude for British Railway's testing station at Rugby



ship up to research and development level. And even the remoter aspects of management demand such technical knowledge behind every decision. So management training, too, is a matter of personal instruction right down the line.

Men who have patiently worked through a long process of such intensive training—and stayed the course—obviously deserve the reward of their skill and patience. But with “jobbing” work (if the

Each scheme has its own scale of bonus, but they are all based upon the performance of the individual under a number of specific headings. The headings and the number of points allotted to them vary in each application. The points are related to a money scale, which, again, varies with each application of the scheme.

In most cases, the relationship between points and money is a straight line up to approximately 60 points, and then curves up-

(10), common sense (20), co-operation (10), and discipline (10).

The methods of assessment vary slightly according to the grade of the employee and the number involved in his group, but fundamentally the principle remains that no assessment is based on the one individual opinion; the assessment is carried out in the presence of the shop floor representative, and the individual has the right to appeal if he does not agree with it.

Hear Both Sides

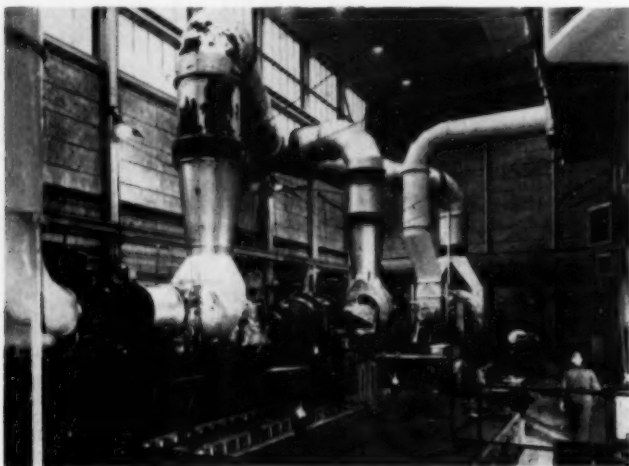
For small groups of people, such as the tool-room and maintenance workers, the assessment is carried out by a committee composing all the people who have knowledge of the operator's performance; but for the large groups, such as the erecting shop and fitting shop, the assessment is carried out, firstly, by the foreman, and secondly and independently, by the chargehand to whom the man is responsible. In the event of these parties being unable to agree, the decision of the works manager is final, but is conditioned by the fact that he has heard both sides.

In addition to these *ad hoc* committees there is, of course, the statutory Joint Production Committee at each works. But Mr. Fielding finds little need for such bodies to straighten out his industrial relations problems.

Ploughing Back

“At first,” he says, “we got the usual string of complaints, but over the years these have died away, and now it is a rare occurrence for the men to put anything on the agenda. Usually, the only item is ‘Chairman's Remarks.’ So I use the opportunity to put them in the picture as regards the state of trade, the competition we're having to meet, the amount of money we're making—I tell them everything.”

Heenan and Froude's specialists are ahead of their overseas competitors to-day. But Mr. Fielding knows that he must keep them ahead. And so each year large sums are ploughed back into research and development work. The brains are there; this will give them their chance.



RESEARCH: Froude hydraulic dynamometer used for research at the National Gas Turbine Establishment

term can be used without disrespect), payment by results is not easy. Mr. Fielding, however, decided that it was not impossible, and at Fielding and Platt Ltd. pioneered the introduction of a system of merit rating which is still in force.

Merit Schemes

There are three schemes in operation, which together cater for every hourly-paid worker employed and some staff. They cover (a) non-productive and unskilled and semi-skilled workers, such as labourers, crane drivers and slingers; (b) journeymen and apprentices employed on pattern-making, moulding, core-making, tool-making, heavy and light machining, bench fitting and heavy erection, pipe fitting, fabrication and welding, and inspection; and (c) supervisors up to the grade of foremen.

wards to whatever maximum it is deemed expedient to pay. Thus the money value per point increases rapidly at the top of the scale. The scheme is treated as a payment-by-results system, and the bonus money corresponding to the number of points allotted is added to the appropriate consolidated rate.

The characteristics upon which all unskilled and semi-skilled non-productive workers are assessed are: Sense of responsibility (20 points), output (20), initiative (20), co-operation (20), and general shop discipline (20). The productive workers and skilled non-productive workers, such as maintenance men, tool-room employees, are assessed on: Craftsmanship (40 points), output (40), and experience (20). Supervisors are assessed on: Powers of leadership (20 points), initiative and drive (20), knowledge of the job (20), administrative ability

MANAGEMENT AT WORK

RESEARCH SAVES FATIGUE

FOR years, the crane-driver has been a Cinderella of industry. No one could measure his efficiency—so no one bothered about it. But some time ago somebody in the Steel Company of Wales, Ltd., started looking at crane cabs. They found that, in many cases, drivers had to lean out of their windows to see what they were doing. They found that control



CRANE COCKPIT: Laboratory mock-up of the novel BISRA crane cab

handles were large and moved in wide, horizontal sweeps—which meant that they had to be far apart and clumsy to operate. And they found that inspection and maintenance were often difficult.

So the company asked the British Iron and Steel Research Association to design them a crane cab which would cut out these faults. The photograph shows the prototype result.

Size of controls has been reduced, cutting down operator fatigue. Knobs have been substituted for sword grips, cutting down wrist movements. "Joy-stick" mechanisms have been introduced, so that an operator simply moves the handle in the direction he wants the crane hook to go.

Seating, working height and areas and visibility have also received attention—and lessons

learned from aeroplane cockpit design have been incorporated. Accessibility for maintenance has been improved.

Prototypes have now been tested for over a year under working conditions in a steelworks—and the company are happy. Drivers are happier, work better.

FLYING APPRENTICES

APPRENTICESHIP schemes produce trained craftsmen; they do not necessarily produce loyal and enthusiastic workers. Something more is needed.

Short Brothers and Harland, Ltd., of Belfast, have found one answer. Under the new scheme, their 800-odd apprentices can qualify as air pilots at reduced fees. Chosen applicants receive flight training at the Ulster Flying Club at Newtownards for 15s. an hour if under 21 and 30s. an hour if over that age, as against about £3 10s. an hour for normal training charges. Flying course consists of 30 hours' flying, equally divided between dual and solo flights.

PORTABLE PLANNING

A MASTER-CONTROL layout board 15ft. long and 12ft. high, which can be dismantled and kept in a small cupboard, is easing production control problems at the Boeing Airplane Company, Seattle, U.S.A.

Designed by two planning employees of the company, the board consists of 3ft. square sec-

tions sliding on a system of runners. When assembled in one unit, they give a complete layout of the No. 1 plant. Buildings, interior walls, facilities, etc., are shown on the board by permanent lines. And the whole board is marked in half-inch squares, the side of each square representing four feet.

Small plywood duplicates of every piece of equipment in the plant, from drill presses to swivel chairs, are used in layout planning. These two-dimensional models are laid on the board, and photographs taken of the finished board, or of any section or sections. These are then used as blueprints.

The sectional board replaces 15 large-size layout boards.

ECONOMISING ENGINEERS

GRADUATE engineers are likely to become scarcer during the next decade. So American engineering companies are now planning to make better use of those they already have.

Seventy per cent of 495 companies covered in a survey by the National Society of Professional Engineers are now delegating simplified and standardized routine engineering jobs to less skilled workers, leaving qualified men to concentrate on creative work. These new workers are largely drawn from the large percentage of students who fail to complete their training courses.

Delegated work includes drafting, designing, record-keeping,

SPACE SAVER: Assembling the sectional master control layout board at Boeing's Seattle plant. Three-foot square sections slide into place to form a complete plan on which models of plant and equipment can be arranged. Dismantled the board packs into a small space



MANAGEMENT AT WORK

and operating experiments and pilot plants.

Other common methods indicated by the survey:—

- 1.—Centralization of top-level engineering, with parallel decentralization of ground-level work.
- 2.—Clear-cut delegation of authority and responsibility.
- 3.—Well-developed training programmes within the company.
- 4.—Intensive training of supervisory engineers in job methods and human relations.

Auxiliary engineering talent is being combed from such sources as consulting and drafting firms, industry-college co-operative plans, retired engineers, and research organizations. Some companies have relaxed acceptance standards.

AIDING SIMPLIFICATION

TO create the desire to simplify office methods is how H. H. Longman, head of the O and M department of Unilever, Ltd., describes the function of an organization and methods exhibition which was opened a short time ago at Unilever House. The exhibition, which has been devised and arranged by the O and M department, is for the managers of Unilever and their associated home and overseas companies. Directors, managers and anyone who controls staff may visit the exhibition after making application; subsequently it is hoped to make the exhibition available to members of the staff.

On display are many examples of time, labour and cost-saving ideas in the office. Some of them are already widely used by Unilever companies, others are modifications of systems in use and the remainder are more experimental. All the methods shown are not intended to be adopted as they stand, but to foster the right idea and outlook towards the simplification of office tasks. Some of these practical ideas are explained in "Short Cuts Office Efficiency" on page 78 of this issue. Examples range from the extremely simple, such as how to stick



A corner of Unilever's O and M exhibition (see "Aiding Simplification")

reinforcing rings on paper quickly and efficiently, to a means of printing two sets of information from one address plate.

The exhibition is scheduled to run for four months. In the first two weeks over 70 people had already been conducted round it.

KEEPING UP QUALITY

THE Austin Motor Co., Ltd., have inaugurated a works relations scheme to build even greater quality into Austin vehicles.

For this purpose they have created a character named Particular Pete, "an ordinary working-chap who thinks for himself."

Every week a different poster will be put up round the works stating in rhyme the thoughts of Particular Pete. And the management is inviting Austin work-people to contribute to the scheme with their own rhymes, for the best of which a weekly prize of £5 is being offered.

PAIRING UP FOR SALES

MOBILE demonstration unit now touring agricultural shows is an interesting tie for joint sales. E. K. Cole, Ltd., wanted to sell more television sets and electric space heaters in rural areas where no mains electricity was available. So when Petbow, Ltd., manufacturers of electricity generating sets, started a mobile

unit, Ekco joined in—to give rural dwellers practical evidence of what they were missing by not installing Petbow generating sets. And Ekco, of course, arrange tie-ups with their own dealers wherever the vehicle travels. As Confucius is reported to have said: "One hand washeth the other."

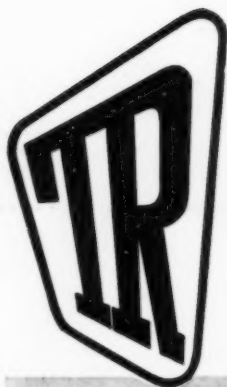
EXECUTIVES' SALARIES

ADMINISTRATION of executives' salaries in America is becoming less haphazard. A pilot study by the American Management Association reveals that a variety of formalized techniques are being applied up to the £14,000 a year level.

The study covers 556 middle-management positions in 25 companies known to have sound compensation procedures. Of these companies, 22 apply job evaluation practices at executive level; 18 extend them to every middle-management job. Methods, in order of preference, are:—

- 1.—Ranking.
- 2.—Points system.
- 3.—Factor comparison.
- 4.—Combination of methods.
- 5.—Classification.

All but two of the companies use formal organization charts in fixing executives' salaries. Nineteen have prepared job descriptions for executive positions. Less popular is performance rating; only 10 of the 25 companies use this in determining middle-management salary levels.



service

More than 20,000 firms already use equipment such as that shown below, the installation and maintenance of which, on a rental basis, is T.R. Service.

SIMPLE INTERCOM



Press Button
Desk Telephone

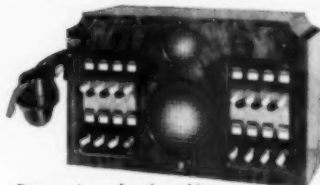


Press Button
Wall Telephone

FOR

instant communication between any number of telephones from 3 to 17.

LOUDSPEAKING TELEPHONES



Directaphone Loudspeaking
Telephone

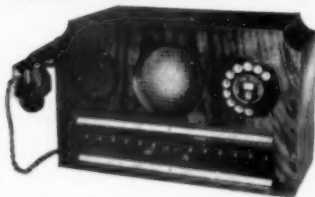


Press Button Desk
Type Telephone

FOR

full intercommunication between loudspeaking master instrument and up to 16 telephones or two loud speaking instruments and up to 15 telephones.

LOUDSPEAKING AUTOMATIC TELEPHONES



Faxmaster, calling 20
selected departments
by keys, dialling for
other departments.



Automatic Telephone
Desk Type

FOR

full intercommunication between 15 to 1,000 or more telephones with loud to loud speech between Faxmaster instruments—and for staff location purposes.

T.R. SERVICE includes also the installation and maintenance of Synchronised Clocks, Time Recorders, Time Signals, Works and Office Loudspeakers, Watchman Patrol Recorders, Fire Alarms, etc.

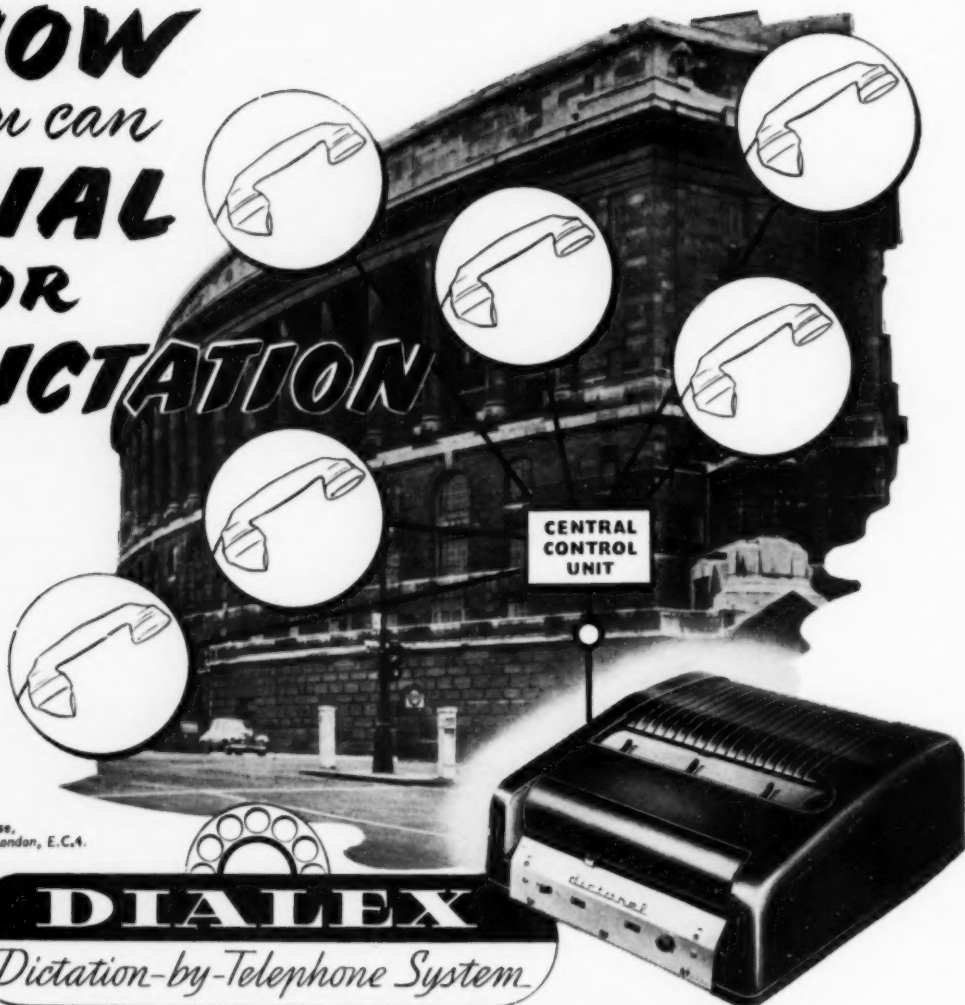
Full details from:

Telephone Rentals Ltd.

HEAD OFFICE, 22 KENT HOUSE, RUTLAND GARDENS, KNIGHTSBRIDGE, LONDON, S.W.7
14 OPERATING BRANCHES THROUGHOUT THE UNITED KINGDOM

H-F 001

NOW you can DIAL FOR DICTATION



Unilever House,
Blackfriars, London, E.C.4.

DIALEX *Dictation-by-Telephone System*

PATENTS APPLIED FOR

The greatest advance ever known in office efficiency is achieved by the DIALEX Dictation-by-Telephone System. Instead of every executive having his own dictating machine, which he may use for only a small part of the day, it is now possible for one machine to serve as many as six people, even if they work in entirely different parts of the building.

DIALEX brings to any sized organisation all the advantages of mechanical dictation at a far lower cost than ever before possible.

The DICTOREL Magnetic Dictating Unit, may be located in the typing pool, and is connected to each executive's desk through the EXISTING *INTERNAL TELEPHONE SYSTEM. NO ALTERATION TO EXISTING INTERNAL TELEPHONES OR WIRING IS NECESSARY.

The dictator has the same control and facilities as if the dictating machine were on his desk. British in concept and design, this system, developed by Unilever Limited and The Trevor-Johnstone Company Limited, is now in use at Unilever House, London, E.C.4.

*The DIALEX Dictation-by-Telephone System can be used with equal efficiency in conjunction with any recognised make of intercommunicating telephones.

Enquiries should be addressed to the Sole Manufacturers.

THE TREVOR-JOHNSTONE COMPANY LIMITED

Head Office and Showrooms: 14, BERKELEY ST., PICCADILLY, LONDON, W.1.

Phone: GRO 3871 (5 lines)

Technical Development and Service Depts: 169-174, SLOANE STREET, KNIGHTSBRIDGE, LONDON, S.W.1. Phone: SLOane 6198 and 8470

Works: Knightsbridge, London, S.W.1. Phone: SLOane 9777. Area Offices: MANCHESTER · LEEDS · BIRMINGHAM · BRISTOL · DUBLIN

All-in Transport Maintenance Cuts this Firm's Delivery Costs

By DAVID EARLY

Cost
Cutting
Angle

While new vehicle prices remain high, relatively large investment upon equipment for the maintenance shops can result in a net saving upon delivery costs. An outstanding demonstration of this is the very completely equipped repairs department of Ind Coope and Allsopp, Ltd., at Burton-on-Trent, where units of the firm's transport fleet receive anything from routine checks to major overhauls which are virtually "rebuilt".

THE garage and motor repairs department of Ind Coope and Allsopp Ltd. at Burton-on-Trent has an operating and maintenance staff of about 240 men. It is responsible for supplying vehicles and personnel to the transport manager, who has to ensure that each vehicle is returned for servicing after every 500 miles.

The area served by the department includes Burton-on-Trent itself and all breweries, bottle stores and depots in the provinces. The firm's Romford brewery is responsible for looking after its own delivery fleet. About seventy agency lorries are maintained from Burton-on-Trent, as well as over a hundred other lorries and motor cars.

Varied Fleet

In addition to lorries, the department handles 35 Scammell semi-trailers, 19 1,800-gallon tankers, and eight four-wheeled trailers, as well as various units used for internal transport in the brewery. (These include five Fordson tractors for shunting purposes, and three mechanical shovels used for picking up coals and ashes, loading on to railway wagons, and similar jobs.)

Servicing is carried out jointly by the driver and mate of each

lorry. This system has proved very satisfactory in practice because the men take a personal pride in the appearance of their vehicle, and also because it enables good and bad drivers to be readily distinguished.

Instead of the usual slips, which men sometimes claim that they have never received, the serial numbers of vehicles due for servicing are displayed on a notice board beside the check-clock. No matter whether the driver has his usual vehicle or a relief lorry, the

routine must be carried out and the vehicles whose numbers are on the board must be serviced the following morning. This system also takes care of relief lorry maintenance, although the relief vehicle has no regular driver.

For any general instructions or notifications, such as a reminder of the importance of chassis lubrication, the manager of the department, Mr. W. Langford, relies on circular letters to each of the men concerned rather than on notices on the board. His experience is that the letters are more likely to be read and acted upon.

One-tenth of the fleet is serviced daily in rotation. This makes each vehicle due for servicing once a fortnight (on a five-day working week).

Routine Duties

The normal duties carried out are: wash, polish, and grease chassis by the driver and mate; check tyres, examine batteries, check steering, check foot and handbrake levers for travel and examine generally by the mechanics and garage foremen. The whole of this operation takes 3½ to 4 hours, after which the vehicle is loaded for a suitable



HEAVYWEIGHT: Long-distance inter-depot services are operated by these tankers

journey, which can be carried out in the driver's working day.

Any man driving a relief lorry must wash and grease it in the same manner as his own, and before leaving the garage, drivers must report to the garage foreman for inspection.

It has been very noticeable that since the introduction of a high-pressure washing machine and an under-cover wash, considerably more interest has been taken in the cleanliness of the lorries. Quite apart from the fortnightly service, drivers will spend whatever time is available in keeping their lorries clean.

The washing machine is fed from an ordinary service main at a pressure of 30-40 lb./sq. in., stepped-up to 300lb./sq. in.

Quick Washing

The mud is virtually stripped from the mudguards when the washing jet is applied, but for finishing-off a fine mist can be produced. This machine was made by the Laycock Engineering Co. Ltd., of Sheffield. Before its installation, it took half an hour and thousands of gallons of water to clean a lorry and the drains were constantly becoming blocked with mud. The washing machine has overcome this difficulty by laying the mud on the floor where it can be swept up. The installation of a high-pressure greasing plant has also given excellent results.

Trailers for articulated vehicles (one driver operates three trailers on shuttle running) are serviced fortnightly at week-ends (on Saturday mornings). The power unit is the driver's responsibility, but the trailers are maintained by the garage staff since they are interchanged from vehicle to vehicle and so become "nobody's baby."

In the servicing of heavy vehicles on long distance work, a similar routine applies, but all vehicles are cleaned, greased and checked weekly on Saturdays because of the higher mileage. Four-wheeled trailers drawn by the heavy vehicles are serviced by the garage staff.

When a new lorry is put into service, suitable journeys are arranged for the running-in period. On completion of a thousand miles, the engine oil is

changed and after two thousand miles it is changed again, the sump being drained thereafter at the end of every two thousand miles. A small metal holder on the dashboard carries a card showing when the next oil-change is due. Oil from the company's bulk store is delivered to the shop in 500-gallon quantities by tanker and is supplied to the vehicles by means of a mobile unit of the department's own design and construction. A change of engine oil can actually be effected in five minutes.

Petrol is drawn from underground tanks. To guard against

are on the road, mechanics prepare various units ready for use as replacements when required. A reconditioned engine is therefore available for each unit which is being rebuilt, but gear box, transmission and all other assemblies and components are individually examined. On emerging from the paint shop, the lorry is virtually a new vehicle.

The company aims at replacing about one-sixth of the fleet every year. Each vehicle is given a coloured card which is mounted on a board in the manager's office and the system of colours enables the replacement position to be

HOMEWORK: Ind Coope's transport section is equipped for major jobs. Home-built body and cab converted this tractor into an all-weather vehicle. It is used for shunting in the brewery sidings



breakdowns, there are two petrol pumps working on the same supply line. One of the old hand-pumps has been retained as a stand-by in case of power failures.

Running repairs are carried out as they become necessary; they vary considerably with different drivers. Faults are reported to the garage foreman for attention, the driver taking over a spare or relief lorry while his own vehicle is being repaired.

After three years' running (approximately 45,000 miles) every delivery vehicle is completely stripped. Every part is examined and renewed where necessary, the body is repaired, and the whole lorry is repainted. An interesting point is that after stripping the whole chassis is placed in the steam jenny and cleaned down. This keeps the shop and operatives clean and cuts expenditure on rags, which are a costly item.

In peak periods, while vehicles

seen at a glance. Yellow stands for 1947, brown for 1948, and the years 1949, 1950, 1951 and 1952 are represented by purple, blue, red and white respectively. The board is arranged alphabetically by geographical centres and is also divided into sections such as "Pending Location," "Cars and Lorries on Loan," so arranged that, in conjunction with the system of colours, it enables the number of vehicles purchased in any one year, the ages of the vehicles at each station, and any similar information to be very rapidly obtained.

Each vehicle is also tabulated in a record book which constitutes a history of the department's transactions and operations over the period of its life. Turning back the pages, one finds particulars of a Morris purchased in 1937 for £181 or a 10 h.p. Standard which cost £176! These glimpses of the

Continued on page 110

'The World's Luxury Typewriters'

STERLING — SIEMAG

NEW MODELS

'The very latest in practical and elegant design'



"DE LUXE"

46 keys, 92 characters, new finger-fit keytops. Phantom touch for fast typing. Touch control. Misprint key.

- Ribbon economy 4 positions (including stencil)
- Segment eraser dust protectors
- New sound proofing
- Automatic paper injector, 12½" models
- 8 key decimal/sterling tabulator
- New refinements in all essential parts
- 12½", 15", 18" and 24" carriages

"STANDARD"

Single bar tabulator. All other new features similar to De Luxe models, except paper injector.



"QUICK"

Bookkeeping Typewriter with manifold front feeding device for day books, invoicing, carding, etc. The dual purpose machine 15", 18" and 24" carriages.

"SOLID"

Without tabulator, 12½" carriages only.

Current S.M. Models available 12½" Carriages.

The typewriters with the World reputation for
SPEED — PRECISION — ELEGANCE — DURABILITY

Available from
Sole Concessionaires
and Distributors

STERLING TYPEWRITER CO., LTD.
Grand Buildings, Trafalgar Square, London, W.C.2.
Telephone: Whitehall 3583

Or
Recognised
Agents

SEPTEMBER, 1953



We make no apologies for the flowers this month—
it is just our way of saying "Thank You"
to our many friends, both old and new,
for the verbal bouquets passed to us
over the last few months.

Wherever carbon-copy forms are typed—
in small firms or large—Econoset
Continuous Stationery and the Econojet
Typewriter Attachment has provided a
simple and inexpensive method of
eliminating waste time in the handling of
carbons and forms.

—here indeed is Continuous Stationery the modern way

Econoset Econojet

PETTY & SONS LIMITED • Whitehall Printeries, Leeds 12 • Telephone 32341

Controlling Maintenance Costs (3)



In the last of this series, the author describes how the tools of modern management—time and motion study, productivity indices, etc.—are being used by Imperial Chemical Industries Ltd. to establish and to control maintenance costs. Of particular interest is the I.C.I.-developed technique of "analytical estimating".

How Work Study Can Control Maintenance Costs

INTERESTING results are being achieved by Imperial Chemical Industries Ltd., who are approaching the problem of measuring maintenance from the work study angle. Believing that, as time goes on, the chemical industry must spend more time and money on maintaining its increasingly valuable equipment at a satisfactory level of efficiency, I.C.I. have endeavoured to evolve dependable methods for the measurement and control of maintenance work. Some of their new ideas have already been put into practice.

I.C.I.'s approach appears to be in close accordance with the recommendations of the Specialist Team on Plant Maintenance, who suggested that the control of the labour force of a maintenance department might best be exercised by comparison of the actual man-hours taken to complete a specified programme of work with those estimated as "standard" for its completion. One of the members of the team was a senior works engineer of the company's Billingham Division, Co. Durham.

The company's labour force now includes over three thousand tradesmen engaged on maintenance or construction jobs, who are regularly working against standards developed in this fashion.

Asked if his plant and equipment were adequately maintained, a works engineer might reply

By A. G. THOMSON

with an emphatic affirmative—but on reflection he might qualify this statement by adding that he never had time to get through all the jobs that should be done. Both answers might be right, depending on precisely what was meant by adequate maintenance. In the absence of any quantitative system of measurement, every engineer would have a different way of arriving at the broad answer to the broad question.

Over a period, a competent plant engineer will no doubt have made a series of approximations

on which his answer can be based, but it is unlikely that he will be able to demonstrate accurately the detailed observations from which these approximations were derived. In many cases, an engineer who dissected a particular maintenance job might be surprised at the number of variables he discovered.

If all these variables and their effects were taken into consideration, he would probably find that jobs which he had regarded as being repeated consistently at intervals of, say, twelve months, actually involved a high proportion of non-repetition work. It is, therefore, important that the work should be studied very closely before the plant engineer instructs his staff to carry it out, so that he may know how to arrange and interpret the various operations to be performed.

The first requirement is to schedule the items of plant or equipment to be maintained, decide what must be done to each item, and assess how frequently each job will probably have to be

carried out. Given such a schedule, it is possible to start a building programme. How many people will it take to carry out this part of the programme, and how many will be available on its completion to carry out the next part? In working out the answers to these questions, the engineer arrives at the stage of breaking down the job by the application of time study principles, allocating the labour force to certain categories of jobs, and arriving at some degree of continuity for each type of tradesman in the labour force.

Building a System

I.C.I. regard this as only the first stage in their approach to the problem of measuring maintenance work, but it is a sound and useful foundation for further exploration. Their next thought was that, for a programme to be of real value to management, the information made available through work study would have to be reasonably reliable and reproducible.

The question of method is very important because it is integral to the work study approach to control of resources. The company's work study section has developed a technique termed "analytical estimating" for the quantitative assessment of widely diverse types of work, particularly that of engineering tradesmen.

The work study estimator must be a man of wide practical experience in the kind of work for which he is going to construct estimates. He is given an extensive course of carefully graded training, lasting four to six months, during which his natural ingenuity is reinforced by mental discipline.

Estimator's Role

At the end of his course, he will be conscious of the scope for improvement in method based on a thorough, careful and informed scrutiny of the accepted ways of carrying out the craft work of an individual tradesman. He will also be competent to develop improved methods which, while consistent with good practice, are essentially simpler than those which are likely to be adopted without detailed forethought.

The driving force of the work study estimator is confidence that an improved method can be found if he uses his brain and relies on his trade background and experience to determine what is practicable. In effect, he has been shown how to approach each operation with an entirely fresh mind and take nothing for granted.

Agreement First

Any improved method he is able to suggest must, of course, conform fully with the requirements of safety and good practice. When a work study estimator, with the aid of the techniques he has acquired, succeeds in developing an improved method, that method must be agreed with the operating supervisor before being put into effect.

Thus the work study estimator works, not independently, but in very close collaboration with operating management, whose functions he does not in any way usurp. Managing always remains the job of management, right down to charge-hand level.

Once the question of method has been agreed, the next step is to assess quantitatively the amount of work involved at each stage. The work study estimator has also been thoroughly trained in the techniques of work measurement, by time study and associated techniques. He has a clear picture in his mind of a "standard" rate of working, which is equitable and reproducible.

Standard Time

With this to guide him, he prepares a break-down of the job as performed by the proposed method into small components, known as elements. For such of these elements as are not covered by any reliable reference data already established and proved, he will estimate the time required for the adequate performance of each one in turn.

With his long practical experience and developed judgment, he will estimate this time at "standard" level. ("How long should it take me as a trained expert to do this element?") As we have said, he will make use of any

reference data he has proved, but in the absence of such data he can only estimate. As time goes on, he should gradually be able to augment his store of reference data.

The possibility is envisaged that a "library" of reference data may be built up. In some cases, appreciable progress in this direction has been made.

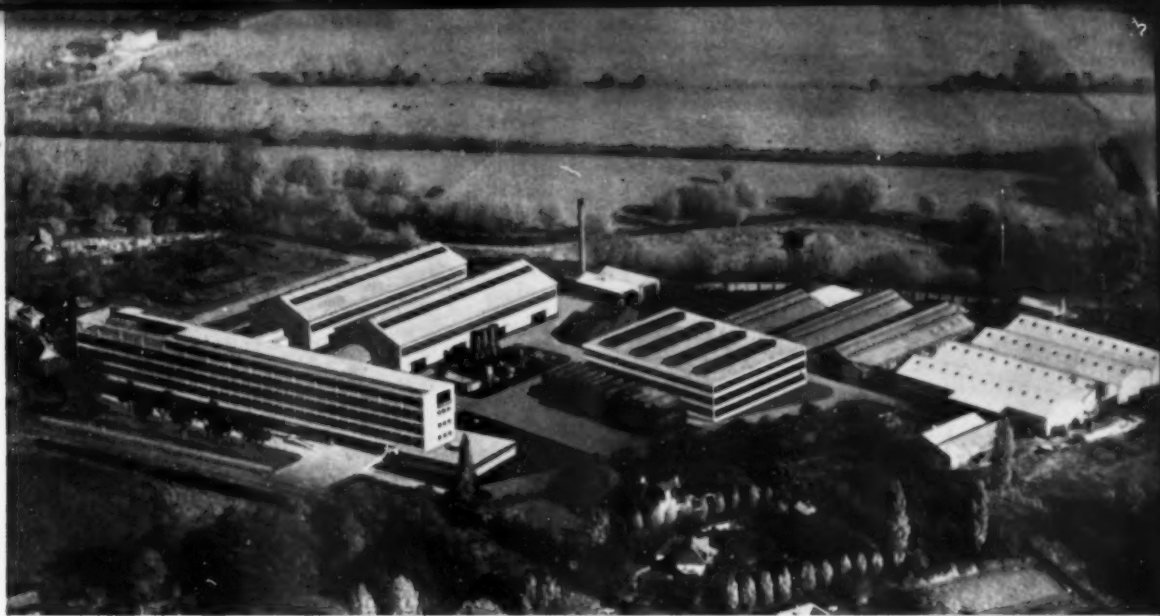
So far, the work study estimator has been considering the time required to do the job adequately. He will now make provision in his estimate for suitable rest allowances. A time for working, plus a time for rest, will give him a measurement of the work involved. He is then in a position to state that a particular job might require X working hours plus Y hours of rest, making a total of Z working hours. The work component of that job is therefore Z standard hours.

Three Purposes

Where appropriate, times arrived at in this manner can be used as the basis of an incentive scheme for maintenance work, but it is believed that work measurement serves at least three purposes which are of even greater value to management. First, the facts it establishes are of assistance in determining the effective manning of any project; secondly, such information is an aid to the more effective forecasting and organising of material and human resources (the potentialities of the latter being so often influenced by availability of spares and materials at the right place and time, etc.). Thirdly, work measurement data provide a basis for assessing and controlling the rate of progress through indices of current performance.

Real Value

In the light of practical experience over a period of some four years, it is felt that a practical method of quantitative assessment of work in the maintenance field is in itself a useful contribution. The real value of the analytical method, however, lies firstly in the attention it focuses on method improvement, planning and organization, and secondly in the intelligent interpretation of control data which become available when a basis for measurement has been established.



Aerial view of the factory of Pest Control Ltd., Hurston, Cambridge showing (on left) the office and administration building designed by the author. The long, narrow block forms a screen for the rest of the factory.

Building the Modern Office

By EDWARD D. MILLS, F.R.I.B.A., F.R.S.A.

AS a result of the reduced amount of office space available in our large cities and the ever-increasing rentals of office space, it is now becoming common practice for industrial concerns to centre their administration, publicity, sales and accounts offices within the factory unit, with a small contact office in the nearby city centre.

A major office unit of this kind, planned in connection with a factory development, demands special treatment.

The office buildings should be sited as near as convenient to the factory entrance, to enable visitors to reach the offices without passing through the factory. They should also be placed so that any noise or vibration from the factory does not penetrate into the offices. If smells are normally encountered in the factory, special care should be taken to see that wind-borne nuisances are carried away from the office block by the prevailing wind.

Multi-storey buildings are generally desirable for offices. Single-floor office space with top lighting in not only unsatisfactory in prac-

Office and administration buildings today tend to be more centralized, more elaborately equipped, and, in general, to enjoy a higher status. In this article, seventh of a series upon factory construction today, Mr. Mills describes how architect and builder are meeting these new demands of management.

tice and wasteful in site area, but generally unpopular with the employees who rightly feel that their conditions are improved by a direct view from a window, preferably on to pleasant surroundings.

Windows of offices should be well spaced with sills not more than 3ft. from the floor. They should extend to the ceiling surface, to ensure that the ceiling is well lit (a dark ceiling gives a depressing effect and considerably reduces the natural light in the room).

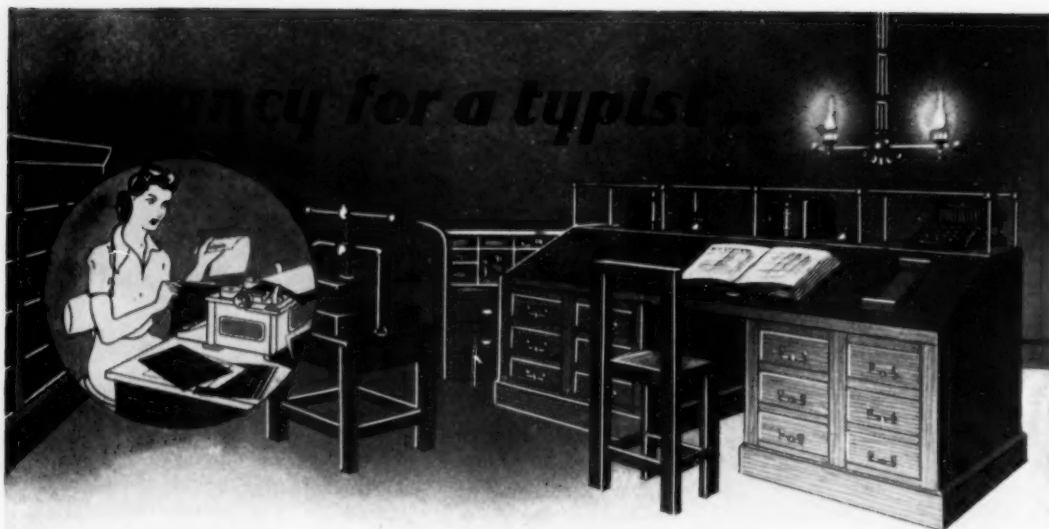
In the planning of an office building, the depth of the block is of considerable importance, if adequate natural lighting is to be available and if work is to be carried out during the major part

of the year without the need for artificial lighting.

In general terms, rooms with windows on one side only should be from 18ft. to 20ft. deep, with an absolute maximum of 24ft.

For large office areas, a height of 10ft. to 11ft. is generally suitable. Long, narrow rooms as individual offices should be avoided, as it is very difficult for a narrow room to be furnished conveniently and pleasantly. A minimum width of 8ft. is desirable.

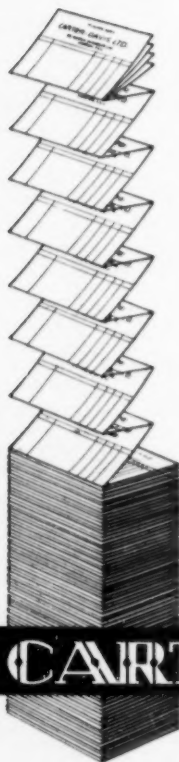
Normal practice for economical arrangement is for the general layout to consist of a central corridor of widths varying from 5ft. to 8ft., with office space on both sides. Where corridors are central, some natural light is desirable.



YOU'D hardly expect a really efficient typist to sit in this office! Yet this type of furnishing is no more 'old fashioned' than the many unproductive operations still being carried out by many typists.

One has hardly to look around the modern office to note the vast strides that have been made—and yet—there are still typists to-day who are compelled to work to out-of-date ideas. "PRIMUS" Continuous Stationery has replaced the out-of-date unproductive operations previously carried out in the office—interleaving and extracting loose carbon sheets, inserting and aligning separate stationery forms, etc.

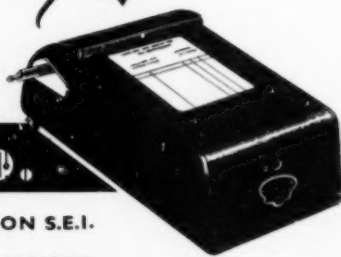
"PRIMUS" saves **ONE HOUR IN EVERY THREE** on invoicing, works orders, goods received notes, purchase orders and other tasks of a repetitive nature. With the simple attachment, "PRIMUS" forms can be used on any make of typewriter. The smooth feeding of the forms into the machine assures that the typist is engaged **ALL** the time on productive work.



PRIMUS Continuous Stationery

THE PRIMUS STANDARD REGISTER

For **HAND-WRITTEN RECORDS**, the Primus Register used in conjunction with Continuous Stationery ensures the same speedy smooth operation, while a copy automatically locked in the machine provides your auditor with a check on each transaction.



CARRIERS-DAVIS LTD.

QUEEN ELIZABETH STREET • LONDON S.E.1.

TEL: HOP 0204-5-6.

Branches at: BIRMINGHAM - MANCHESTER - DUBLIN - GLASGOW

This can be provided by 'borrowed lights' in the partitions of the offices adjoining, or by the incorporation of panels of hollow glass block which are translucent but do not allow clear vision into the rooms.

The general tendency in America, now becoming popular in this country, is for individual offices to be reduced to a minimum and for large open areas to be provided, with good natural lighting, the individual sections of which are separated by low counters or fitments. This arrangement gives a much greater feeling of space, is more easily altered and rearranged, and is more economical in floor area than a multiplicity of small, totally-enclosed office units.

It is appreciated that many executives require private offices which give a considerable measure of seclusion. These can be provided in conjunction with the larger open space, and can be used to make an interesting variation on the layout and arrangement.

Another feature of recent practice, both in this country and America, has been to pay considerable attention to the need for flexibility of arrangement within the office building. In view of the frequent changes of administrative methods and size of administrative staff, this is a matter of great importance, and one which can, if properly considered, reduce alteration costs to a minimum.

The building should be planned so that partitions can be removed and re-erected in a different form,

at any time, with the minimum of labour and without damage to the building structure. The use of standardized unit partitions is, therefore, strongly recommended. Such partitions can be constructed of metal, wood or plastic; they can be solid, partly or fully glazed with single or double glazing. Units can be fitted with windows, doors and communicating hatches and special fixing devices can be incorporated for wall charts, pictures, maps, etc.

Standard Units

These standard units can be erected and dismantled with considerable speed and the layout of an entire office building can be altered over a weekend, making for a flexibility of arrangement which would be impossible if partitions of permanent materials were used.

A corresponding flexibility of services for the building is a matter requiring considerable study, although the range of services in an office building is not so great as will be found in a manufacturing area.

It is very difficult to arrange a heating system which can be regarded as flexible, as the moving of radiators or other heating units is an expensive matter. The most satisfactory alternative, which allows the movement of partitions independent of the heating source, is to install heating panels in either ceilings or floors. This type of heating is not only efficient but comfortable, as it enables the



INTERIOR (1): Typical open planning of general offices in the new Time and Life building, London. Designers: Misha Black and Alexander Gibson

Picture by courtesy of Design Research Unit

warmth to be provided with a lower air temperature. The most common form is the radiator panel using low-pressure hot water, but electrically heated metal panels can also be provided.

One of the most interesting recent developments in concealed heating is the Frenger system. It consists of a series of pipe coils, suspended from the room ceiling, through which hot water is circulated. Beneath them is a false ceiling of perforated aluminium panels. By this means, a service duct is naturally provided to take other pipework and wiring, concealed from view, and the ceiling panel itself has considerable acoustic properties. As a further advantage, flush lighting fittings can be built into the system so that concealed lighting, acoustic treatment and the provision of a service duct is all covered by the one installation.

Temperatures

Recommended temperatures for office buildings are as follows:—

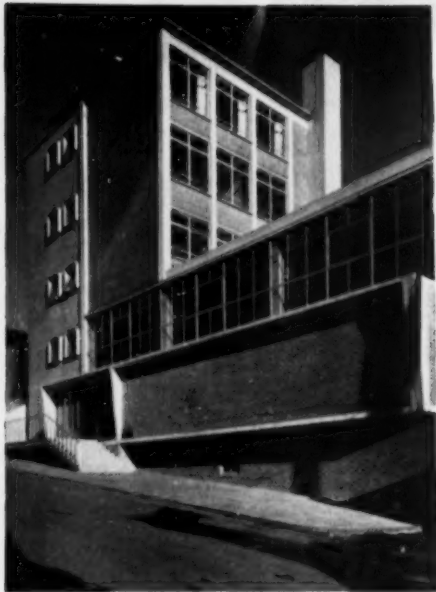
Offices	65°F.
Corridors and staircases	60°F.
Lavatories and cloak-rooms	55°F.
Storage areas	50°F.

Artificial ventilation is not normally considered necessary for



INTERIOR (2): General office in the administration block of Swan Hunter & Wigham Richardson Ltd., shipbuilders, Wallsend-on-Tyne. An exterior view of the building is on the following page. Architects: Richard Sheppard and Partners

Pictures by courtesy of "The Architect and Building News"



ENTRANCE (1): The attractive entrance of the Swan Hunter offices (interior view on previous page)

office buildings in this country. Natural ventilation should be provided by windows giving one or two air changes per hour.

The increased use of electrically-operated machinery in offices means that the problem of providing electric supply without the necessity for trailing leads is one of importance, and the electrical services should, therefore, be run in ducts in the floor. There are now many patented systems of ducting which fulfil their purpose very satisfactorily. These allow outlets at any point so that accounting machines, etc., can be plugged in at almost any position.

Telephone systems, internal communication system, bell circuits and other communication arrangements should be considered at an early stage of design, to avoid unnecessary and unsightly surface wiring. In all such cases, the G.P.O. and firms installing internal telephone systems are always glad to co-operate.

Where large floor areas are involved, the advisability of a central vacuum cleaning plant can be considered. In any case, adequate points for electric vacuum cleaning or other forms of mechanical floor cleaners must be considered. The installation of synchronized electric clocks, should also be given consideration during the planning stages.

The increasing use of mechanized systems in offices makes the question of floor loads one of importance. For normal office purposes, a floor capable of carrying 80lb. per foot super is adequate, but where office machinery is used in any quantity (or where libraries, strong rooms, stores or archives are planned) the floor should be designed to take up to 150lb. per square foot.

Think Early

If alterations or modifications to existing buildings are being made and the question of heavy safes or other heavy equipment is under consideration, the load-bearing capacity of the floor should be investigated before such items are installed. Floors which are not sufficiently strong to take heavy loading can only be reinforced at a later date by expensive methods; early consideration will pay.

Artificial lighting in an office building will depend largely upon the work carried out. The general principles discussed in earlier articles apply equally to office space. Direct and reflected glare must be avoided, shadows eliminated and an adequate intensity must be provided. Recommended lighting intensity for normal office work such as typewriting, book-keeping and clerical activities is 15-25 foot candles; for fine work on drawing boards, etc., 25-30 foot candles are considered necessary.

While additional lighting can be provided by desk lamps if necessary, this should be avoided as far as possible. The general lighting of the office should be designed so that it is adequate for all requirements.

Keeping Down Noise

The question of sound insulation in an office building needs serious consideration. Large typing pools with many typewriters working at speed can produce a noise which is practically continuous and extremely irritating, not only to the people working there but to those in adjacent offices. A great deal can be done by proper planning so that typing pools, mechanical accounting departments, etc., are planned away from quiet areas such as conference rooms and executives' offices. There are, however, occasions when the two must

be adjacent, and under such conditions not only must the partitions themselves be soundproof to the desired degree, but the connections of partitions and other units to floors and walls must be so designed that they do not form paths along which sound can travel.

In rooms where considerable noise is expected, a great deal can be done to minimize it by the use of sound-absorbent materials for ceiling and wall linings and by ensuring that machines are mounted on proper insulating pads (as in the familiar case of typewriters). At the same time, this increases the workers' comfort.

Floor materials can also add to quietness. Hard surfaces such as tiles and terrazzo are quite unsuitable for office areas as they are not only cold to the feet, but unduly noisy. The alternative materials are wood block or strip, rubber, cork tiles, linoleum or carpet, according to the importance of the area concerned and the amount of money available. The main requirements of an office floor are that it should be reasonably resilient, easily cleaned, noiseless and warm.

Continued on page 112



ENTRANCE (2): Entrance hall to the office building of the Johnson Wax Factory, Winsconsin, U.S.A. Architect: Frank Lloyd Wright

make no mistake...

For many years Monroe Adding-Calculators have been the basis of mechanisation in enterprising British offices. Now, for the first time, a Monroe adding-listing machine is also available. More than 2,000,000 are in use in the U.S.A. The wealth of experience gained in the world's most competitive market has been packed into the design of Monroe's first sterling currency model.



make no mistake...

The introduction of the Monroe 400 adding-listing machine brings another big segment of your business figuring within the scope of fast, efficient Monroe mechanisation. Latest and best, even by exacting Monroe standards, it combines easy, smooth operation with unlimited flexibility and astonishing speed. The Monroe 400 is not merely an *improved* adding-listing machine—it's a revolution and a revelation.



make no mistake...

make yours a

Monroe

MONROE CALCULATING MACHINE COMPANY LIMITED,
10-11, ALBEMARLE STREET, LONDON, W.1. GROSvenor 7541.

Top The CSA-10, one of the range of nine calculators designed by Monroe to meet every need. Send for brochure on business figuring "Demands of a changing market".

Below The 400, a brand new sterling adding-listing machine with many exclusive features—Send for brochure.

Branches in Birmingham • Cardiff • Glasgow • Leeds • Liverpool • Manchester • Newcastle

Short Cuts to OFFICE EFFICIENCY

Reproduced in this month's *Short Cuts to Office Efficiency* are some of the ideas featured by the Organization and Methods Department of Unilever, Ltd., in an exhibition organized by them for the managers of Unilever and associated companies. A reference to the exhibition appears in *Management at Work* (see page 64 of this issue).

Group Discussion

ONE way of simplifying methods is by group discussion. The procedure is for a group of office staff to meet periodically under the leadership of an organization and methods man (or whoever is responsible for this work). The group prepares a complete breakdown of its own work, reviews the procedure and discusses ways of simplification. The leader guides the discussion; his main function is to stimulate ideas and draw out suggestions.

Towards Simplification

HERE are nine questions for the office manager to think about. They lead to work simplification.

- 1—Can any forms be dispensed with, merged or redesigned to simplify entry or extraction of figures?
- 2—Is any unnecessary information being produced?
- 3—Are any unnecessary returns being received?
- 4—Is there much copying of figures and information?—is it necessary?
- 5—Is the filing system simple and efficient? Can files be found by any member of the staff or only by the filing clerk? Is the filing index both numerical and alphabetical? Is there a cross-reference subject index?
- 6—Are there any means of cutting down movement of documents and staff in the department?

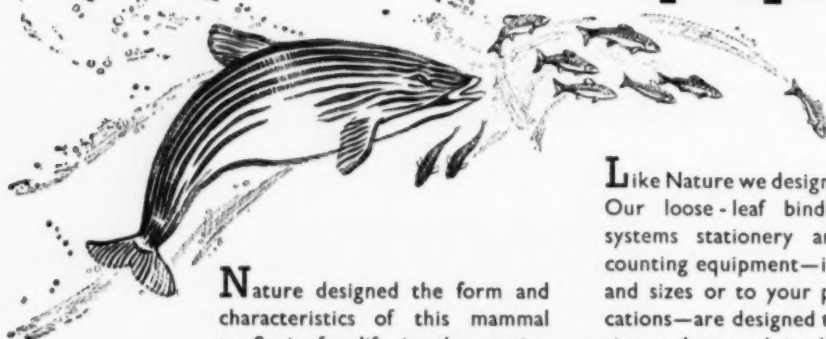
Can files, cards, books, etc., be brought nearer to the staff who use them?

- 7—Can the typing load be reduced by using form letters, window envelopes or photo-copying?
- 8—Can work be reduced by doing two jobs in one, e.g., producing the cheque requisition list while recording the charges?
- 9—Can the mathematical work be simplified by
 - (a) setting unit standards
 - (b) cutting out the shillings and pence in statistical records
 - (c) short cut and bulk calculations
 - (d) ready reckoners

Use Charts

WE have found from past experience that the best way to study, devise and present new methods is by using charts. With a chart, you can show all the forms used in a system. By tracing the connections between them it is easy to spot weaknesses or duplication. Similarly, a proposed system can be graphically presented with a chart showing the

The Porpoise . . . designed for a purpose



Nature designed the form and characteristics of this mammal to fit it for life in the marine world . . .

Like Nature we design for a purpose . . . Our loose-leaf binders and sheets, systems stationery and machine accounting equipment—in standard styles and sizes or to your particular specifications—are designed to assist organization and control in the industrial and commercial life of to-day.

MOORE'S MODERN METHODS, LTD

19, 20 & 21 FARRINGDON STREET · LONDON · E.C.4
CENTRAL 3200

AND AT BIRMINGHAM, EDINBURGH, GLASGOW, LEEDS AND MANCHESTER

WRITE FOR ADVICE, LEAFLETS (STATE SUBJECT),
OR QUOTATIONS, GIVING REFERENCE 1158A

IBM

Electric Typewriters

are enabling
users to secure

up to 20 carbon copies at one typing
up to 30% increase in typing
output

up to 90% reduction in typing
effort

uniform stencils and masters without
extra care

a perfectly even type impression
irrespective of the typist's touch

For further information ask for booklet
229/2 sent without cost or obligation.

IBM UNITED KINGDOM LTD.

formerly INTERNATIONAL TIME RECORDING CO. LTD.
8 BERKELEY SQUARE, LONDON, W.1 Telephone: MAYfair 2004
"Where the clock chimes in Berkeley Square"

and at Birmingham, Manchester, Leeds and Glasgow

HEAD OFFICE: INTERNATIONAL WORKS, BEAVER LANE, W 6

How to SAVE TIME and TROUBLE

Here is a filing system, adaptable to any standard filing cabinet, where things just *cannot* go wrong. Files never get out of order because each one has its own individual pocket. There is nowhere for loose papers to get lost.

SPEED Rapid fool-proof identification is guaranteed by special colour index systems.

STRENGTH Built to last a lifetime, each 'Mil-Span' filing system is fitted with tough inner and outer metal bridge-pieces so that files can never be crushed or damaged.

Milners MIL-SPAN^{REGD} SUSPENDED POCKET FILING SYSTEM

You will find Milners fully descriptive leaflet very interesting. Write for a copy to:

MILNERS SAFE CO. LTD., 58, Holborn Viaduct, London, E.C.1 Telephone: CENTral 0041-5



Moveable metal bridge pieces hold each file in position. Title slips are protected by transparent covers.

new forms, their link-up and a T.W.I. breakdown of the procedure to be adopted.

It is almost impossible to achieve the same degree of clarity with written reports. Also, charts take less time to make and understand than reports. The use of comparative charts of old and new systems simplifies the task of making decisions and makes the training of staff easier.

The actual operation of producing the chart can be broken down into three parts:

1—Make a T.W.I. breakdown of the existing system and paste on to a chart all forms and records in use, with specimen entries on each. Show the connections between the forms by means of coloured tape, and the action taken by notes on slips of paper.

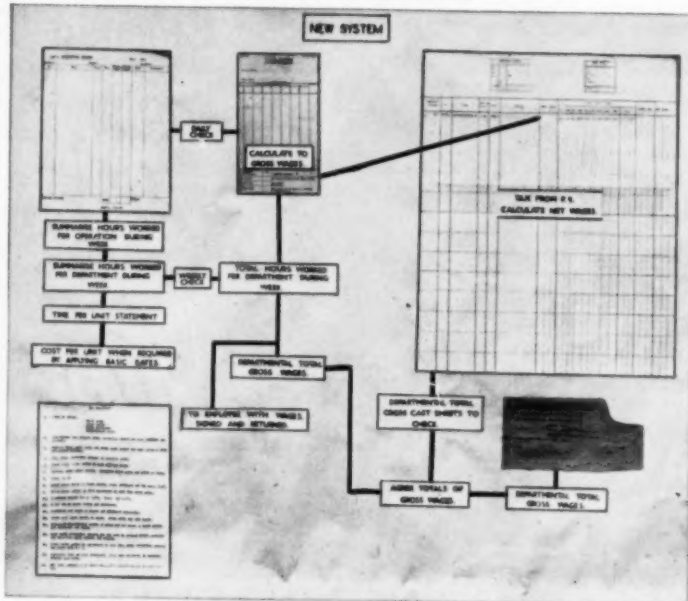
2—With the aid of the breakdown and the chart, try to write down clearly and concisely:

(a) What is required, i.e., the minimum information and action which must be achieved in the task under review.

(b) What control checks on security and accuracy are necessary and economic.

3—Try to design a form which will fulfil the needs in paragraph 2 (a) and (b) with only

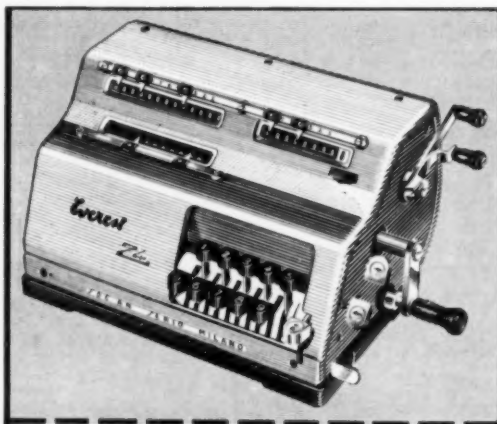
one writing. If further re-writing is required, keep it to a minimum.



How charts are used to present a new system

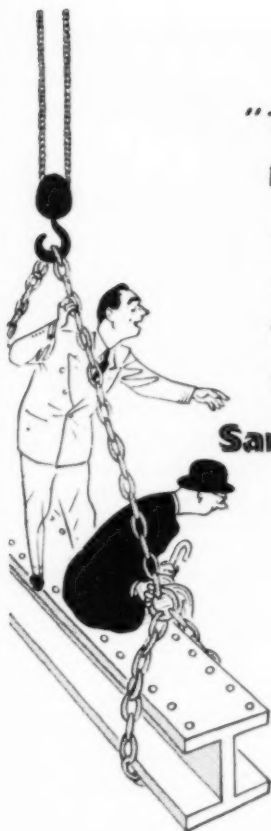
a good accountant deserves an Everest calculator

- ★ Key setting with proof dials
- ★ Single hand operation
- ★ Automatic dividend tabulator and division alignment
- ★ Reverse switch for negative division
- ★ Tens transmission throughout
- ★ Capacity $9 \times 8 \times 13$

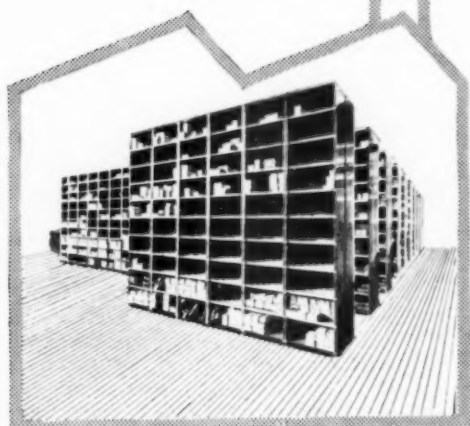


For full details or demonstration write or phone
T.S. (OFFICE EQUIPMENT) LTD.
 31 NEW BRIDGE ST., LONDON, E.C.4
 Tel: CItY 1107

- ★ Sole distributors for Everest Calculators and Typewriters
- ★ Sales and service throughout the country



"THAT'S OUR
NEW FACTORY.
ALL OUR
STORAGE BINS
WILL BE STEEL-
BY
Sankey-Sheldon
OF COURSE."



SANKEY-SHELDON LIMITED

46 Cannon Street, London, E.C.4 CItY 4477 (ten lines)

SPECIALIST
ADVISORY
SERVICE



BACKED BY
34 YEARS'
EXPERIENCE

For ...
**Structural
INSULATION**
of Factories, Warehouses, etc.



For ...
**SOUND (ACOUSTICAL
TREATMENT)
ABATEMENT**
in Buildings, Offices, etc.



For ...
**Industrial
FLOORING**
which is non-slip, ductile, dustless and hard-
wearing, using 'Indasco' Bitumen Emulsion.



We offer you complete service "from the drawing
board to the finished job". Your enquiries are in-
vited on any problem relating to the above 3 items.

The **MERCHANT TRADING COMPANY Limited**
EFFINGHAM HOUSE, ARUNDEL STREET, STRAND, LONDON, W.C.2
Telegram: "Themetra, Strand, London" Telephone: TEmples Bar 5303 (8 lines)

Two successful educational films

in 16 mm., colour and sound

by Walt Disney

"How to Catch a Cold"

Warmed by Disney humour and peopled with delightful cartoon characters such as the kindly intellectual "Common Sense" and the cold-ridden "Common Man," this amusing film has been greatly successful wherever shown. Full of fun and imagination, it is also scientifically accurate, pointing out clearly the Do's and Don'ts of the all too common "common" cold. Children and adults alike will find it memorable.

Approx. 12 mins.

"The Story of Menstruation"

This film combines the dignity of plain speaking with an atmosphere of warmth and ease. It shows how accurate knowledge helps to create a healthy attitude and also stresses the care a girl should take during menstruation. Its touches of warm humour and plain common sense dispel fear and impart an attitude of respect to this essential part of the life process.

Approx. 12 mins.

Two additional educational aids include a physiology chart to introduce the subject and copies of "Very Personally Yours" to distribute after the film.

**These films are equally
suitable for children, and adults
in business and industry**

*Both films can be borrowed free of charge.
Write for further details to 27 Hill St., London, W.1*

**BY COURTESY OF
Cellucotton Products
LIMITED, LONDON**



ABSENTEEISM!

**Give them a CLEAN towel
for every occasion.**

For OFFICE, FACTORY and CANTEN

These **BETTER** quality towels **REALLY DRY** and are **CHEAPEST IN THE LONG RUN** because, released **ONE AT A PULL** from the cabinet there is **NO WASTE.**

KWICK-DRY PAPER TOWELS

- ★ Cut your towel losses.
- ★ Cut your Laundry Bills.
- ★ Cut time waste.
- ★ Offer a fresh, cream shade towel for every occasion.
- ★ Remove infection dangers of the old communal towel.
- ★ Are stronger wet than dry and do not disintegrate.
- ★ Conform to 1937 Factory Act.

**CUT COSTS—BE MODERN
install**

KWICK-DRY de luxe CABINETS

KWICK-DRY TOWELS are also
supplied flat-interfolded in packets

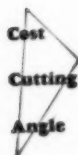


Full details on application to Towel Dept.

**Freeder Brothers Paper Mills
BRIMSDOWN, ENFIELD, MIDDLESEX.**

Tel. HOWard 1847 (5 lines). Grams: Sylkacrape Enfield.

KWICK-DRY
IMPROVED SUPER SOFT
PAPER TOWELS



Some industrialists regard a high absenteeism rate as an unavoidable symptom of current labour conditions—and therefore a standing addition to labour costs. But Ransomes and Rapier, Ltd., have produced conclusive evidence that the problem responds to realistic treatment. Their method—operated against a background of sound labour relations—is to attack specific types of absenteeism through the medium of the pay packet. It was this system to which Mr. R. R. Stokes, M.A., M.P., the firm's chairman and managing director, referred during a recent House of Commons debate.



Pouring a casting in the foundry at Ransomes & Rapier's

BY making a two-pronged attack on specific types of absenteeism, Ransomes and Rapier, Ltd., engineers, of Ipswich, have reduced their total absenteeism rate from nearly 10 per cent in 1946 to a steady level of approximately 4 per cent. Their success is also reflected in a rise in output per man-hour—12.2 per cent over the last three years.

Absenteeism, in many firms, is either accepted as inevitable or tackled only on the broad principles of improving factory conditions and issuing eloquent propaganda. Ransomes and Rapier adopted more vigorous methods. Their lines of attack were resolved into two clear-cut schemes, one of them directed at absenteeism due to unnecessarily protracted sickness, and the other at "voluntary" absenteeism without permission or legitimate excuse.

Both schemes, now firmly established, take an intensely realistic view of the workers' preoccupation with the contents of their pay packets. They are:—

1 The payment of sickness benefit by the company, to offset the effect of the waiting period before National Insurance benefit begins and thus encourage workers to report sick as soon as they have cause to do so.

2 The distribution of an incentive bonus among all workers, from floor-sweepers to the most highly-paid operatives, who contribute to increased output. The bonus is planned to maintain the gap between the earnings of skilled and semi-skilled men.

Taken individually, these schemes have produced remark-

able results. Sickness absenteeism, slightly more than 4 per cent in 1946, is now pegged at 1.7 per cent. And voluntary absenteeism has been lopped, since 1949, from 2 per cent to one-tenth of 1 per cent.

As these figures suggest, the schemes were not launched simultaneously; it was, in fact, the success of one which inspired the other.

Sickness Benefit

First came the sickness benefit scheme, introduced in July, 1946, after the management had realized the extent to which sick workers, especially men with families, were "hanging on" until they became really ill and had to stand off for much longer periods than would have been necessary initially.

Their reluctance to report sick, the management discovered,

was almost entirely due to the National Insurance waiting period of three days. To overcome this, Ransomes and Rapier decided to make payments on their own account to all sick workers with more than six months' service.

During the first years of this scheme, the rate for men with at least five years' service was 6s. a day for the first 90 days, and 4s. a day for a further 90 days; from this was deducted the statutory N.H.I. benefits to which the company had contributed. Rates for women and for workers under 21 and over 65 years of age were scaled accordingly, and where length of service was less than five years the periods of benefit were reduced to 30 days.

Although these rates were adjusted when the new National Insurance Act came into force in

These Cash Schemes Cut Absenteeism, Boost Output

By **PETER SPOONER**



The boys' school at Ransomes and Rapier's Ipswich works

1948, the principle of the scheme remains the same. At present, a man with at least five years' service receives the full N.I. rate (paid by the company) for the first three days of sickness, followed by supplementary benefits of 1s. 6d. a day for 90 days, and 9d. a day for a further 90 days.

What It Costs

In its first year, the scheme cost £1,900; but within that year the sickness absenteeism rate was halved. Since then, the annual cost has averaged less than £1,000 (£592 in 1952), and absenteeism has been reduced to 1.7 per cent, at which it has remained for three years. As the company employs more than 1,400 workers, little mathematical skill is needed to determine whether or not the scheme has paid off.

Following this conclusive evidence that the strongholds of absenteeism were not impregnable, the incentive bonus scheme was introduced in the second half of 1949. Its aims were to reduce voluntary absenteeism (then accounting for the loss of nearly 60,000 man-hours a year) and to boost production despite the scarcity of skilled labour.

Main Principles

To achieve these aims the following principles were adopted:—

1 The scheme applies equally to all production workers, whether they are on piecework rates or not.

2 Through the adjustment of individual bonuses, each worker receives precisely the same amount of cash, irrespective of his tax eligibility, tax

being paid by the company. This is intended to correct any impression among highly-paid skilled workers that extra effort is not worth much.

3 The net amount is related to output through the workers' average earnings. All piecework rates are fixed on a straight "time allowed" basis, and the datum, based on average earnings when the scheme began, is standard time plus 58 per cent. The net quarterly bonus equals 8s. tax-paid for each point by which average earnings exceed this.

Earnings Increase

Since the introduction of the scheme, average earnings have increased steadily; only on two occasions has the quarterly figure fallen even slightly. In the second quarter of 1953, the average was time plus 76 per cent, which equals a tax-paid bonus of nearly £30 a year per head.

An important stipulation is that neither individual earnings nor

future bonuses will be affected if the quarterly average is ever below datum level. The workers receive cash advances just before Christmas and summer holidays.

The present remarkably low voluntary absenteeism rate (calculated by comparing "hours worked" with "hours available," the latter after deductions for authorized absence and sickness) plainly reflects the scheme's success. This is reflected, too, in the general attitude of the workers; in the punctilious observance of the set times for tea-breaks, etc.; in the speed with which the power graph now reaches its peak when work commences—five minutes, against 15' before the scheme started.

Publicising

Team spirit is strengthened by regularly posting-up the performances of all shops, with individual earnings broken down into percentage groups. No man likes to feel that he has, through slackness, reduced not only his own but his workmates' money; and this sense of responsibility, plus a competitive element, have made important contributions to increased output.

Any worker who consistently fails to achieve at least time plus 50 per cent is tackled by his foreman. If necessary, a time study man is called in—not to dictate, but to suggest how the worker can earn more.

Closely connected with the scheme's success is the company's rate-fixing policy. Here, the usual difficulties of rate-fixing are accentuated by the rather startling

5 REASONS WHY THIS INCENTIVE SCHEME CUTS VOLUNTARY ABSENTEEISM

- 1** It applies to all workers who help to increase output
- 2** It maintains the differential rates for varying skills
- 3** All tax on the bonus is paid by the company
- 4** Its effect is collective, but individual shop performances are publicised to encourage responsibility
- 5** A collective fall "below datum" in any quarter cannot affect individual earnings or future bonuses

range of Ransomes and Rapier's products, and the fact that nearly 50 per cent of their output is specialized non-repetitive work.

To avoid friction, the large rate-fixing and time study departments are staffed entirely through promotions from the factory, by men known and respected for their practical experience and skill. The system operates smoothly, and it is now four years since the works' complaints committee has had to arbitrate in a rate-fixing dispute.

Low Turnover

Another result of the incentive scheme is that the number of people who leave the company within a given period has decreased by at least 50 per cent. This is particularly important as, owing to the diversity of the work, an average employee is unable to do full justice to himself until he has been with the company for about six months.

There are, inevitably, odd men out. The company's method of dealing with them is straightforward. After the factory gates

have been closed at 7.30 a.m. and 1.30 p.m., no worker is admitted until he has received permission from his foreman. If he has a reasonable excuse, however, no time is deducted. The foreman makes daily reports to the personnel manager, giving details of the time lost by his men and also their excuses, and these details are collated on personal record cards.

Interview Stage

Habitual offenders are interviewed by the personnel manager, who tries to ascertain the real cause of their absenteeism and to suggest how it can be corrected. This almost invariably produces the right reaction. If it does not, the offender is told, in effect, that he is "upsetting the machine, and must look for a job that suits his way of life." It has not been necessary to give that advice to any worker during the last two or three years.

Liaison between management and workers is equally straightforward. The works industrial council—rather larger than some—is balanced with 36 elected members

and 36 *ex officio* members. Considerable pains are taken to preserve the workers' confidence in the method of electing their representatives; the secret ballot is checked by an official from the Town Clerk's department and the results are open to inspection by anyone.

Output figures and piecework balances are discussed at works council meetings, and the management present a very frank picture of the company's current and future activities. This information is then disseminated by the workers' representatives, while printed copies of the minutes are made available in all departments.

Sense of Security

Good labour relations, on which they have prided themselves during their 84 years' history, form the background to Ransomes and Rapier's attack on absenteeism. But the full success of that attack is undoubtedly due to the sense of security and collective responsibility which the sickness benefit and incentive bonus schemes have created among the workers.

Handy-Andy

WARM AIR TOWELS

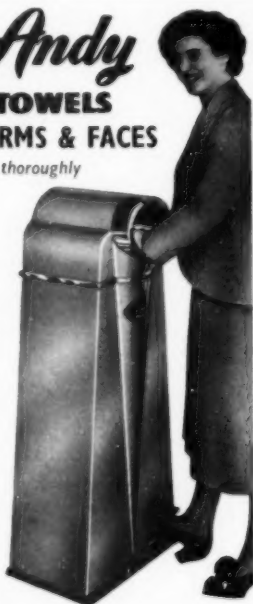
DRY HANDS, FOREARMS & FACES

swiftly, hygienically, thoroughly

at one quarter the cost of paper towels, at less than one third the cost of laundering.

(The saving is even greater if the cost of replacements is included.)

Handy-Andy is the most hygienic and economical means of complying with section 42 of the Factory Act. What you save will pay for your Handy-Andy in less than a year.



Write for full details to:

QUIZ ELECTRICS LTD.

160 High St., Teddington, Middx.



Automatic SANITARY TOWEL MACHINES



Essential Welfare Equipment in every modern

FACTORY OFFICE BUILDING LAUNDRY Etc.

where women are employed

The Machine illustrated is our ST/TC/36 which can be supplied to take either the "Lilia" Soluble or "Dr. Whites" Cottonwool Towel. Capacity is 36 packets. Especially recommended for use where 50 women or more are employed. Towels individually packed in cartons are obtained from us direct.

Price: £11. 12. 6.

Other models from £6.10.0.

Fully guaranteed. Immediate delivery.

Write for particulars or call and inspect our latest models.

LAMBART & SMYTH LTD.

40, Sloane Street, London, S.W.1. Tel: SLOane 7629.

BOILING PANS



STAINLESS
STEEL LINING

The experience of more than a century is at your disposal.
Consult us for all catering needs.

MAXIMUM EFFICIENCY

Pleasing appearance,
hygienic Stainless Steel lining.
Economical Fuel Consumption.
Reliability guaranteed.



LOOK FOR THE
NAMEPLATE



Bartlett

BELL STREET, LONDON, N.W. 1. ENGLAND Telephone PADDINGTON 8222

BIRMINGHAM: 12, Whitmore Road. Tel. Victoria 1615 MANCHESTER: 530, Stratford Road. Tel. Trafford Park 0288

S.B. 53

Policy Column

DON'T LOSE THAT 'HOMELY' TOUCH

The works canteen is no longer a poor relation. Today it is treated more like a prodigal son. Gone are the wooden benches, well-scrubbed tables for eight or twelve people, concrete floors and whitewashed walls "relieved" only by dismal shades of green, brown and terra-cotta on doors and window sills.

Nowadays we see tables topped with plastics and other materials in pastel shades, chairs of bright canvas, plastic or wood, floors in gay tiled designs, and walls and woodwork on which interior decorators have lavished their art.

All this is to the good, of course. No one disputes that factory owners have been wise to recognise the full value of attractive canteen facilities. But let us keep a sense of proportion.

A works canteen is a place where workers eat and drink. Except where it does double-duty as theatre or recreations room, it is occupied for short periods only. By all means let it be bright, warm and comfortable. But let it also be easy to keep clean; a place in which service can be quick and efficient. Above all, let it provide homely surroundings in which men and women do not feel out of place in their working clothes.

The last point is important. It sometimes accounts for the apparent anomaly that a luxurious canteen lacks customers, while a plain dining room is always packed.

The job of a works canteen is to supply good meals quickly. Comfort and colour add to its service, but it must remain a place where workers feel that they "belong"—and a place that quite clearly belongs to them.

Careful Buying Cuts the Bill for Canteen Clothing

By WINIFRED McCULLOUGH

Senior Canteen Adviser, Industrial Welfare Society

PROVIDING clean working dress for the staff is quite an expensive business in a large canteen. The annual cost of purchases per employee averages not less than £1, and in my experience may be as much as £5. For each employee there must be four overalls, four caps and four aprons, and all of these must be kept in good condition.

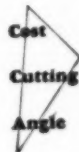
One difficulty is knowing which sizes to buy in the first place. As a rough-and-ready guide, a typical group of ten canteen workers might produce two outsizes, three W.X.s, three "women's" and two "small women's." Of these, one of the "women's" will probably be very tall and thin, and one of the W.X.s very short. But how can purchasers take into account the additional likelihood that some of the original ten will have left by the end of a year?

The answer is two-fold:

1—Buy five outsize overalls, three W.X.s and five "women's," and alter them to fit.

2—Make the alterations in such a way that, when the garments shrink, hems and underarm seams can be let out again.

This takes care of staff changes. An outsize overall can be turned up at the hem and re-seamed down the sides and sleeves for an employee who normally wears a W.X. or "women's" size. If it



An adequate supply of clean working clothes is essential in all canteens. This is an expensive item, but replacement costs can be reduced by buying overalls which can be adjusted to fit women of different sizes, and by seeing that all clothing is kept in good condition. Practical hints on the buying of overalls and accessories are given here.

shrinks or is subsequently required for someone larger, it can be let out again. A "women's" size can be treated in the same way for a "small women's" wearer.

Good maintenance is, of course, important. A contract with a laundry, or with the manufacturer of the overalls, may cost 10s. per head per annum, but will pay for itself over and over again by lengthening the life of overalls and by the time it saves in last-minute repairs to belts, buttons and hems. Alternatively, a linen-maid, with a sewing machine, might be employed full- or part-time.

Most popular material for canteen overalls is pre-shrunk white drill; next come blue, green and



VARIETY: There are all ages, all sizes in the average group of canteen workers. But uneconomical variety in clothing purchases can be avoided

fawn drill in that order. Some canteens issue white overalls to cooks only, some to counter girls only, and some to supervisors and manageresses only. White certainly shows the dirt more than

colours, but when clean it looks clean and, unlike colours, it suits most complexions.

Flowered overalls look very pretty on supervisors and counter hands, but they are necessarily of less sturdy materials than plain overalls and stand up less successfully to canteen wear-and-tear—which equals in a week the domestic wear of at least a month.

The most popular style is the cross-over, for three very practical reasons:

1—It can be pulled in to fit waists of various sizes.

2—It gives a second clean "front" when the first is soiled.

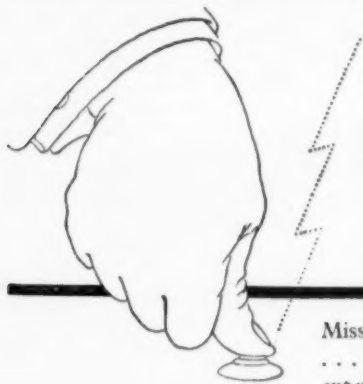
3—It has no buttons to lose and no button-holes to tear.

The type which buttons in front is, however, very popular for supervisors and manageresses, who do not need such "cover-all" garments.

Practical Sleeves

Long sleeves are generally preferred to short. Short sleeves are more comfortable in warm weather, but long ones—which can be rolled up anyway—are better on chilly days when they hide "woollies" of all colours of the rainbow.

Every vegetable hand, washer-up, cleaner and vegetable cook needs two aprons, one of checked or striped cotton and the other, for wet work, of plastic or rubber. Cotton aprons can also be issued for counter hands and trolley girls



*Miss Jones! Miss Jones!!
where IS Miss Jones?*

Miss Jones, we regret to say, is away today. A little (ahem) stomach upset . . . Possibly something she ate . . . Or, we would add from considerable experience, something she has used for eating with—a spoon, a fork, a glass . . .

Research leaves no doubt whatever that many minor ills (and sometimes major outbreaks) are traceable to unsatisfactory washing-up in the canteen. A single infected utensil can spread germ-infection widely, and the result is a total of 'time-off' that can seriously hinder production . . . Don't blame the canteen staff. Instead, if you want your canteen to be above reproach, write for details of the Deosan Clean Food Service Routine. No extra work; in fact less work. No great cost; in fact an incalculable saving . . . Miss Smith, take a letter to:—

DEOSAN LIMITED

Catering Hygiene Division, 345 Gray's Inn Road, London, W.C.1
(One of the Milton Group of Companies)



Overall Opinion...

"They've tried a few tops on these tables, one time or another!"

"I reckon this plastic stuff beats the lot though."

"What's it called, Jim?"

"Well, as a rule I'm only interested in the food but I couldn't help asking what this is, seems it's called 'DECORPLAST'."

"There's quite a lot of this plastic sheeting about — you see it everywhere nowadays — suppose it's all the same?"

"That's just where you're wrong, Bill, the manager was saying that this is by far the best in all respects."

"Who makes it?"

"Holoplast Limited, and I reckon they know as much about this kind of thing as we do about metal!"

"You're right there — I've seen the Holoplast walls in the new 'admin' block."

"Well I think it's lovely, in fact when I get married I'm going to have it in my kitchen!"

"Trust you Mary, you always want the best — don't you?"

DECORPLAST

THE ARISTOCRAT OF PLASTIC SURFACES

Manufactured by

HOLOPLAST LIMITED · SALES OFFICE: 116 VICTORIA ST., LONDON, S.W.1

Telephone: VICtoria 9354/7 & 9981. Head Office and Works: New Hythe, Near Maidstone, Kent.

to wear while cleaning their equipment. Cooks require two white bibbed aprons to every clean overall. Even supervisors will look fresher and cost less in laundry expenses if they use a neat apron for dirty jobs.

The question of caps is always a vexed one. Far and away the least unpopular is the square of butter muslin or, better still, nylon net. If these are lightly starched they will look fresh and becoming for three wearings.

Head Hygiene

From the point of view of hygiene, any cap that covers the ends of the hair is acceptable. Bandeaux—the second most popular style—do not meet this requirement, and should not be worn without a hair-net.

Various types of cap with net "snoods" are all quite suitable. So are Dutch bonnets and mob-caps when properly adjusted. All must be absolutely clean; nothing more easily ruins the attractive appearance of a canteen than a row of crumpled caps behind the service counter.

Talking Points

Why a Canteen Committee?

WHAT are the functions of a canteen committee? A recent issue of the *American Management Record*, organ of the National Industrial Conference Board, outlines them as:

- 1—To communicate "employee thinking" to the canteen management.
- 2—To bring about better understanding by employees of canteen problems.
- 3—To bring about better understanding of company objectives in serving a noon luncheon.
- 4—To be a clearing house for problems of all types which relate to the canteen.
- 5—To be representative of the employees of the company (and not to place undue emphasis on personal likes and dislikes).
- 6—To make recommendations to the canteen management after considering all phases of a problem.

Dough Retarding

A DOUGH retarding unit has just been installed at the *Gloster Aircraft* company's works. Instead of being handled by night bakers, all dough goods are now moulded during the day

and simply "baked off" by one night worker. This leaves the ovens free for the daytime baking of pastry and sponge lines.

At noon, the next day's loaves, etc., are already piling up in specially built refrigerated cabinets.

Penny for the Pot

TEA made in pots is now available to customers of a *West Country* canteen at twopence a cup—twice the price of tea made in urns. About one in 100 factory workers elects to pay the higher price, but "pot" tea appeals to a larger proportion of the office workers.

If Only . . .

HOW much pleasanter canteen life would be if all kitchen equipment were made with standardized trays, shelves, racks, wells and containers.

Oven sheets would fit the cake storage racks, pie dishes would fit the bain-marie wells, all saucepans of the same capacity would have the same diameter, and all cups would hold the same amount.

ABIX CYCLE STANDS

STEEL CLOTHES LOCKERS

All-steel construction with separate coat and hat compartments.

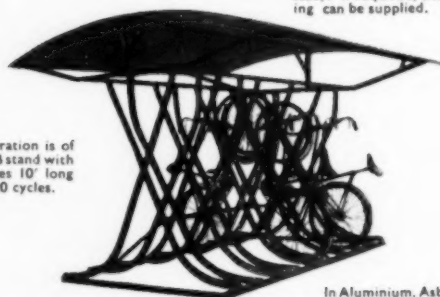
Single units or banks of four.

Stove enamelled olive green.

Size of single unit
75" high
12" wide
15" deep



The illustration is of our type B stand with 12" centres 10' long capacity 20 cycles.



Are constructed of steel throughout, stove enamelled green. Roof sheeting is normally of galvanised corrugated sheet steel. If required, sheeting can be supplied.

In Aluminium, Asbestos or Robertson Protected Metal.

ABIX (METAL INDUSTRIES) LTD

FACTORY EQUIPMENT SPECIALISTS

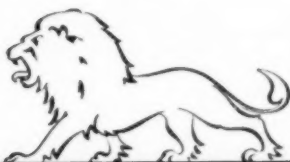
Taybridge Works, Taybridge Road, Battersea, S.W.11

Telephone: BAttersea 8666/7



Where Standards are Highest . . .

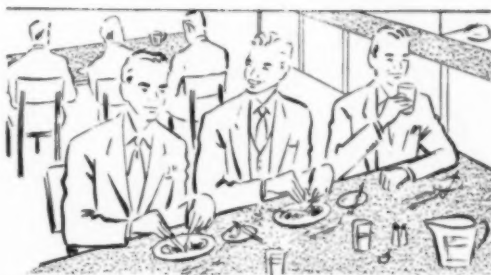
mechanised equipment is chosen with care. The supreme dependability of "Peerless" Food Machines is evidenced by their use in, for example, the "Queen Elizabeth" and "Queen Mary." Built up to the highest standard of mechanical efficiency, not down to a price, "Peerless" machines equip you for the finest quality of service, with the minimum of maintenance. Write for details of the "Peerless" range.



PEERLESS FOOD MACHINES

PEERLESS & ERICSSON
1 Carlisle Road, The Hyde, Hendon,
London, N.W.9
Telephone : COLindale 8811

TA 5316



Surfaced with hardwearing KLINGDECOR, FORMICA and WARERITE plastics, V. C. Panels are specially made to withstand the wear-and-tear of industrial canteens. Spilled soup, fruit stains, tea stains, greasy marks—even burning cigarettes—are no longer hazards to be feared. A simple swish with a damp cloth removes all marks in a jiffy. The hard, non-porous surfaces provide an impenetrable barrier to germs. Safe in temperatures common to the kitchen, they are unharmed by hot dishes and take more than the average hard knock without deterioration. V. C. Panels serve the interests of both hygiene and economy.

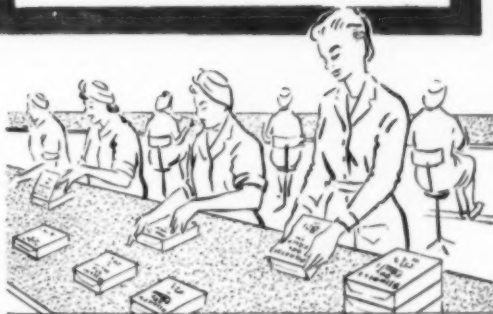
FOR CANTEENS AND WORKING SURFACES

Available in many attractive and colourful designs, V. C. Panels are ideally suited for canteen table tops and serving counters, and for all working surfaces where hygiene is essential. Prices will be gladly supplied upon request.

V.C. PANELS LTD.

Leyborne Wharf, Horton Bridge Road,
West Drayton, Middlesex.

Telephone : West Drayton 3036-7-8 and 3560





MR. BROWN TELLS THEM

plainly

Plain words - that will be just as plain and effective when they're typed. Why? Because Mr. B. is a "Titan" ribbon man. "Titan" typewriter ribbons give crisper, cleaner typing, and they reproduce faithfully the image of the sharp type face. They last longer too. They are made from a new fine-caliber fabric and the specially developed non-smudge ink comes up clear from start to finish. What's more, ribbon changing is no longer irksome, because the end is treated for clean handling. Tell them to order "Titan", and you'll not only get better letters - you'll be popular as well.



TYPEWRITER RIBBON

COLUMBIA RIBBON & CARBON MFG. CO. LTD.

Kangley Bridge Road, Lower Sydenham, London, S.E. 26
Phone: SYDenham 5193-6.

BUSINESS

Business EQUIPMENT SURVEY SECTION

NEW AIDS TO GREATER OUTPUT AND LOWER COSTS

• Office . . 93 • Industrial . . 101 • Canteen . . 106 • Welfare . . 108

FOR YOUR OFFICE

Flexible Adding-Subtractor

NOW added to the *Burroughs* range of business machines is a multiple total adding-subtractor, stated to have more applications and facilities than any comparable machine. It is available in two versions with either 10 or 13 columns, with a sterling keyboard and full duplex facilities. For normal adding - subtracting work, a fully visible tally roll is fitted; but for payroll and other



This is the 13-column model fitted with a forms carriage. It has some interesting and unique features

accounting operations this is replaced by an automatically-tabulating carriage which will take forms up to almost 12in. wide.

One of the machine's most interesting features is the ease with which the two registers can be manipulated. A three-position lever allows either of them to be selected; or both to be used simultaneously; or figure₂ to be fed into each register alternately (the selection being entirely automatic). Simultaneous addition and subtraction can be done in either register, and sub-totals and totals taken. Totalling can be done in

one register and the correct grand total will still be accumulated in the other one.

Both the non-add and repeat keys are live; they energize the machine without additional operations. All the control keys are logically grouped for ease of operation. The motor bar is extra long and placed at the extreme right of the keyboard; this is convenient for short-cut operation. The minus bar is directly under the positive motor bar, and true minus totals and sub-totals can be struck and printed (with clear identification) without extra machine operations.

With the 13-column machine, the keyboard can be split so that quantities and values are handled simultaneously. Both registers still remain available for totals, accumulations, etc. Numbers and amounts can be entered in both registers together, and sub and grand totals obtained. Alternatively, a number and two amounts (one in each register) can be fed into the machine, added and subtracted, and independent totals and sub-totals taken.

With the form carriage fitted, the machine can be used for many simple accounting operations. An example is payroll work. Separate entries (automatically tabulated) can be made for such things as clock number, ordinary wage, overtime, gross wage, tax deductions (or refunds) and other deductions. Net pay is then computed and printed.

All this is done without any calculation over and above the entry of the figures on the keyboard, and the operation of the total and sub-total keys. In addition, the final net pay figures are accumulated and at the end of the payroll a grand total is taken.

The new machines are finished in an amber-grey colour. They are light in weight and attractive and modern in styling. The keys are square, have finger-fitting tops and

are moulded from plastic with figures that cannot wear off in use. Enquiry Ref. No. O.9/1.

Folds Any Way

BRITISH agents for the Dutch *Presto-Fold* machine claim that it is more versatile and less expensive than any similar machine on the market. Letters, invoices, statements, circulars, etc., can be folded in a variety of ways for mailing in plain or window envelopes. Single, double, accordion and two-way (vertical and horizontal) folds can be made, all at a single pass through the machine.

The *Presto-Fold* is hand-operated, but it has an automatic



Simply controlled, but will fold to all patterns.

feed for the sheets, which may be of any size from 8½in. by 14in. downwards.

A simple folding adjustment enables alterations in folding styles and positions to be made quickly.

Enquiry Ref. No. O.9/2.

Everlasting Indexes

INDEXING cards that will not become dog-eared, cannot be torn and will not absorb moisture or burn are made of a plastic material called *Cobex*. They are designed for use with *Powers*, *Hollerith* and *IBM* punched cards and are available in appropriate sizes.

Tabs can be at the right or left or in the centre. Indexing information can be written in ink or with a pencil or ball-point pen, or can

be typed on an ordinary typewriter. Blue-white in colour, the cards are highly flexible, yet it is literally impossible to tear them.

In addition to these indexing cards, the manufacturers will shortly be marketing card-index cards of the same material in sizes 5in. by 3in. and 6in. by 4in. Although initially more expensive than their cardboard counterparts, these products actually save money because they are almost indestructible.

Enquiry Ref. No. O.9/3.

Rapid Reproducing

LATEST office photocopying machine is designed for use with a new translucent paper that is inexpensive and can be typed, written or drawn upon with normal pens, pencils, etc. It can also be preprinted with headings, columns or other information and used as original invoices, production schedules, memoranda or other types of office document. Extra copies can then be produced at low cost and very quickly.

Operation of the reproducing equipment (designated the Ozalid 3049) is very simple. The translucent original is placed in contact with a sensitized sheet of paper.

This paper is available in weights ranging from fine airmail to manilla card. It can be obtained in a variety of colours and reproduction on it may be in black or blue. A quarto sheet of the paper (of normal notepaper thickness) costs just over 4d.

Exposure is made by feeding the original and the sensitized sheet into the machine together. They are automatically fed through and ejected at the front. Density of impression is controlled by a knob which varies the rate at which the forms are passed through.

After exposure, the sensitized paper is passed into another slot in the machine. A few seconds later it is automatically delivered, completely dry-developed, at the front. An exact copy of the original, ready for immediate use, is obtained in about 25 seconds. Continuous printing can be done at rates of up to 250 copies per hour.

Anyone can learn to use the machine in a few minutes. The process is especially suitable for runs of from 20 to 50 copies.

Another machine, known as the Develop Combi is used in conjunction with the equipment where transparent originals are not available. This is a small, desk-top, plastic unit which is a combined



Produces copies cheaply and quickly from translucent originals

exposure and developing apparatus. Into it are fed original documents in contact with a light-sensitive, translucent positive. Both are ejected after exposure and are then fed through the semi-dry developing part of the machine. After a few seconds, positive and original are separated and a translucent original is available (after less than a minute all told) for use with the Ozalid 3049. Single or double-sided originals up to 14½ in. wide can be handled by the Develop Combi. Two translucent positives are produced simultaneously from a double-sided original.

There is only one operating



"Nonsense, man,
I've seen 'em..."

"I'm not arguing. I'm telling you! These Sumlock people are making ELECTRIC calculators. Got it? e-l-e-c-t-r-i-c ELECTRIC! Better write for particulars. Sumlock Machines are always worth investigating."

Apply now for demonstration to SUMLOCK LTD.
1 Albemarle Street, London, W.1. HYDe Park 1331

Branches in: Belfast, Birmingham, Bristol, Cardiff, Glasgow, Leeds, Leicester, Liverpool, Manchester, Nottingham, Sheffield, Southampton.

Easy to talk to . . .

TO be a success a dictating machine must be easy to talk to. You must be able to operate it without having to think about which button to push or which knob to turn. That is why the Agaphone is so popular—it makes dictation so simple. The Agaphone is designed for easy operation. You can use the main controls—keys which respond to the lightest touch or the heaviest hand—or the microphone switch. The time control is another feature that makes things easy. You set it at the beginning of dictation and when you have finished the Agaphone obediently returns to where you started. See it for yourself, you will be surprised how little you have to do to achieve so much more.



Read the facts about the Agaphone then see it . . . try it. Write, call or telephone the distributors.

FACTS

Up to an hour's dictation with the spools of wire held in a foolproof magazine. Can be used for conference recording. Time control enables dictation to be automatically located for playback. Signalling device warns your secretary of remarks, instructions, etc., which are not to be transcribed. Key controls are simple and positive. Small and compact. Handsome appearance. Operates on any voltage or can be used in a car.

M. & L. HAYCRAFT LTD.

241 ST. STEPHEN'S HOUSE, CANNON ROW,
WESTMINSTER, LONDON, S.W.1. Tel: WHitehall 9618/9.

BOLEX puts them in the picture

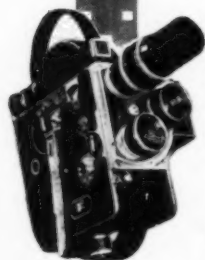
YOUR AGENT

He's the man who meets your customers. Keep him posted on new developments and products with films that your representatives can show him on portable projectors in his office. Offer him, too, films for showroom demonstration and to be really up-to-date make them three dimensional films.



make the pictures yourself (in 3-D if you like)

Nobody knows your business half as well as do you and your executives. You can make your own narrow gauge sales promotion films at surprisingly low cost, with a Swiss precision-made Bolex cine camera—and with a Bolex, you can make them in modern 3-D. Send for information on the many uses of a Bolex in modern business.



Sole U.K. Wholesale distributors:

CINEX LTD.,
9/10 North Audley Street, London, W.1.
Phone: GROsvenor 4546.

BOLEX

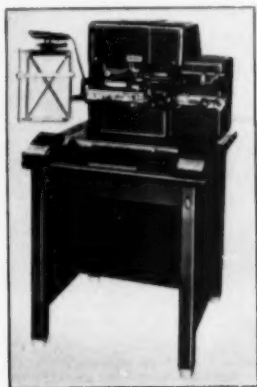
CINE CAMERA

switch. Uniform exposure is guaranteed by the mechanical feed past the fixed light source.

Enquiry Ref. No. O.9/4.

Typed Plates

WITH the new Class 6300 Graphotype machine, embossing metal address plates is as easy as typing, say the manufacturers. The machine is fitted with



Embossing is as easy as typing with this new machine

a standard typewriter keyboard. Pressing the keys selects the correct die, but the actual embossing is done by motor power. Many operators, it is stated, can achieve outputs of 90 three-line plates an hour.

The keyboard has 87 characters—upper and lower case letters, figures, punctuation marks, etc. There is also a blanking key for erasing errors. If the operator makes a mistake, she simply backspaces, erases the error and re-embosses the correct character.

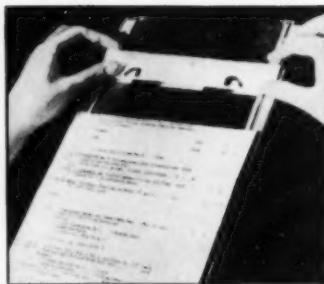
When a plate has been completed, the plate roller reduces all the characters to a uniform height, thus ensuring even impressions in use.

Enquiry Ref. No. O.9/5.

Improves List Production

ENTIRELY new method of producing printed price and parts lists, directories, indexes and catalogues at low cost is provided by the Flexoprint process. Revision of such lists is normally an expensive and slow business; with the new process, however, they are kept constantly up-to-date and can be reprinted whenever necessary—even at a few hours' notice.

Copy is typed directly on special strips of card. A normal type-

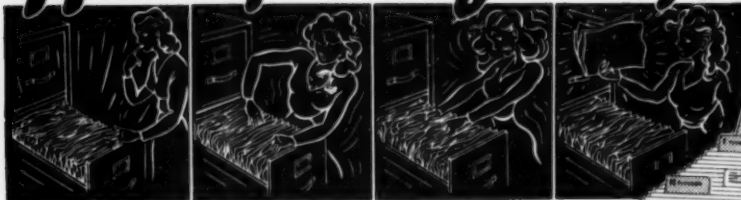


Fixing a card strip on one of the storage panels

writer or Varityper can be used. A card holder and carbon ribbon are the only extras needed. It is claimed that one girl can type up to 300 of the cards per hour.

When typed, the cards are proofread and then attached in correct sequence to special panels. These are made up to represent the pages of the catalogue, etc., and are then photographed on to offset litho plates and printed off. Headings and line or half-tone illustrations can be incorporated on the panels if desired. The panels are preserved as the permanent lists, and alterations or revisions are made by typing a new card strip and

Hang the filing!



Yes, you may well get angry! Ask your boss to instal Vetro Mobil and enjoy your filing and finding.

Twinlock

VETRO Mobil

SUSPENSION FILING
SYSTEMS



Supplies obtainable from Printing, Stationery and Office Equipment Trades.

PERCY JONES (TWINLOCK), LTD., 37, CHANCERY LANE, W.C.2.

CHAncery 8971.

Branches: MANCHESTER, GLASGOW, LEEDS.

Factories: BECKENHAM, KENT



MR. EXECUTIVE!

are your offices arranged to save time?

★
BORROW OUR
'TASCO'
VISUAL
PLANNING
OUTFIT . . .

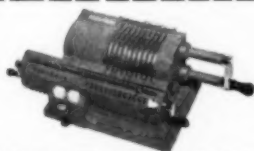


To ensure your offices are economically and attractively planned, borrow our Visual Planning Outfit to make the fullest use of available office space. The outfit consists of scale models of desks, cabinets, cupboards, etc. In a matter of minutes, different ideas can be put to the test. By trial and error the most suitable layout can be determined—without effort or inconvenience. We shall be happy to loan one of these outfits to you without charge.

★ WRITE FOR FURNITURE CATALOGUE

CALCULATORS

to suit your particular needs.



New "Original Odhner", "Hamann", "Olivetti", "Everest" and "Antares" Calculators of various capacities to suit every known need from £35. Accredited dealers for new "Burroughs", "Olivetti" and "Victor" adding, subtracting and listing machines. Rebuilt "National", "Burroughs" and "Remington" Accounting Machines. Use our free consultancy service.

TYPEWRITERS

for
office
or
travel



Being entirely independent, we select and stock the latest new typewriters which we can recommend. Rebuilt Royals, Underwoods, Imperials, etc., and all new portables also stocked. All machines guaranteed and sent anywhere.

★ For all office equipment write or 'phone

TYPEWRITERS LTD

Head Office: 26 Holborn Viaduct, E.C.1.
Branch Office: 109 Southampton Row, W.C.1.

CENTRAL 1212/3

The NEW IDEA IN FILING

The System which not only FILES and FINDS—
It also Signals Important Facts, Charts a
Sequence of Activities
AND FITS YOUR EXISTING EQUIPMENT

Every business has one basic piece of equipment.

That's its filing system.

But nowadays it's more than just a place to file—and find letters. It can be the nerve centre of your business. It can be if it's Shannolink.

First, Shannolink's normal job, filing and finding: it's angled to the eye—you can SEE each file without searching. Its flat top is full width, right across the top of each file—plenty of room for designation and many other things as you will see. It is charted—so that misfiling is almost impossible. An "A" file in a "B" section stands out like a sore thumb.

Moreover, it can be the information centre of your business.

The full-width flat top can be used for much more than mere visible designation—full name and address, telephone numbers, names of executives, credit sanction or anything you need to know. And if you want detailed records of materials required, papers transferred, etc., a record card can be slotted into the front of each file.

And now specific uses—you can have Production control, Sales progressing or Date progressing for any purpose. The right hand side of the flat top is preprinted 1-12 or 1-31 (or supplied plain). These can be codes for processes or dates as you wish. A sliding signal shows the position at any moment. There are a hundred different uses for this progressing.

And Shannolink can be LINKED, file to file in concertina fashion to keep certain files together.

Shannolink is suspended, metal on metal, for long life and tidy filing AND SHANNOLINK WILL FIT YOUR EXISTING CABINETS OR DESK DRAWERS—no expensive special equipment.

There is so much to be said about Shannolink, there's just nothing else like it. Just write "Shannolink" on your letter heading for full details by return and without obligation, and make your files do more work.

Shannon Systems

FIRST IN FILING

The Shannon Ltd.

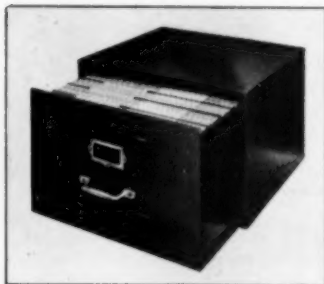
97 Shannon Corner • New Malden • Surrey

substituting it for the old one. Text material can be arranged on the panels in one, two, three or four columns and a wide choice of formats is available. A transfer feature enables material to be moved from panel to panel or from column to column without disturbing the sequence of items.

Panels holding the card strips can be stored in cabinets resembling those used for filing, or in special racks.

By the use of this new process typesetting is eliminated, there is only one proof-reading and the material is always up-to-date.

Enquiry Ref. No. O.9/6.



The Veteran personal cabinet

Desk Top Cabinet

THE Veteran cabinet is a small personal filing unit designed to hold 25 foolscap suspended folders. It is a normal metal filing cabinet in miniature—18in. wide, 11½in. high and 15½in. deep. The

BUILDING THE MODERN OFFICE

AN EXPERT SURVEY

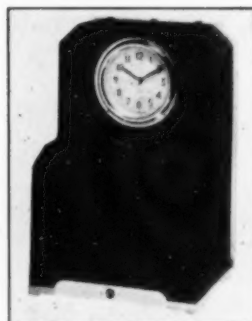
See page 73 of this issue

drawer is mounted on rollers which ensure easy opening and closing, whether full or empty. A brass index holder is fitted and a lock is an optional fitting.

Enquiry Ref. No. O.9/7.

Quicker Clocking

QUICKER "clocking - on" is claimed to result from the installation of the new Autoclip recorder. Only one hand is needed to operate the machine; the mechanism is actually triggered by the insertion of the card. Stamping of the card cannot take place until it is inserted fully—mis-operation and over-stamping are therefore impossible. Each time the card is stamped, a step is clipped from one edge. This ensures correct vertical registration of the stampings.



Triggered by the time card

Another feature is the automatic change-over mechanism that controls the lateral positioning of the stampings. Normally it is set to change from column one to column two at midnight, and back again 24 hours later. It can, however, be set to change at other times. With the 24-hour interval, recordings for alternate days appear in separate columns. This simplifies the work of the wages clerk. He is further helped by the fact that abnormal stampings (e.g. "lates" and "overtimes") are automatically printed in red.

Enquiry Ref. No. O.9/8.

For the reproduction
of anything
that can be written
drawn or typed,
you need an

guaranteed for 10
years with the
automatic copy -
controlled Inking
System

Collams
D.100
Duplicator

Full details from

GERrand 4556

ELLAMS DUPLICATOR COMPANY LIMITED
5 DEAN STREET, LONDON, W 1

patented throughout the World

Remington

The World's
busiest
Typewriter



CUT YOUR COSTS WITH THESE!

● **CONTEX**

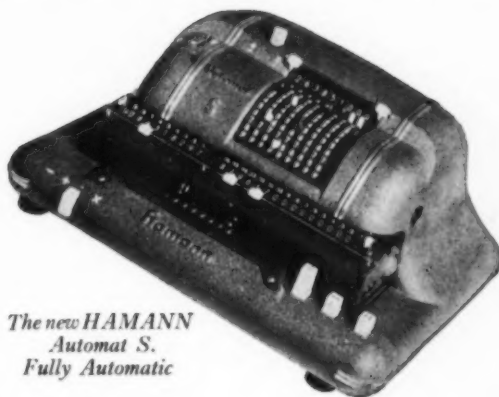
The Fastest, Neatest Adding Machine.

● **HAMANN**

The Leading Calculator.

● **REX RECORDER**

The Easiest to Use Dictating Machine.



*The new HAMANN
Automat S.
Fully Automatic*

OFFICE MACHINERY LTD.

22 KINGLY STREET - LONDON, W.1 - May. 1028

SQUEEZING was the answer here...

Every mechanical handling problem has its solution: it is our business to help and advise prospective users as to the particular type of truck best suitable for their needs. The illustrations show two B.E.V. High Lift Fork Trucks in use at a waste paper works. The problem here was how to move very heavy bales without using expensive and space-wasting pallets and how to stack them so as to utilise every inch of space with a ceiling height of only 9 feet. The answer was the 'Squeeze Clamp', an attachment which grips and raises by pressure. This pressure can be regulated to handle the most fragile articles. The height of lift on these trucks was limited to suit the low ceiling height.



May we help you with your particular problem? Our technical staff are always ready to advise you and illustrated literature is available on request.

We also manufacture Elevating Platform Trucks, Leader Trucks, Tractors, Dock Trucks and Trammer Electric Locomotives.



WINGROVE & ROGERS LTD.

DEPT S/H L

ACORNFIELD ROAD, KIRKBY TRADING ESTATE,
Nr. LIVERPOOL - Telephone: SIMONSWOOD 2237
and BROADWAY COURT, BROADWAY, LONDON, S.W.1

Telephone: ABBEY 2 72

INDUSTRIAL EQUIPMENT

PORTABLE POWER TOOLS

For Industrial Sawing

MAIN characteristics of the Type RS7 heavy-duty portable electric saw are its very high power-weight ratio, its speed of cutting and its exceptional speed-torque ratings. The motor is very powerful and all components had to be of comparable strength. Despite this, the weight of the saw (including a heavy-gauge steel sole plate) is only 17½ lb. This, combined with the very good balance of the tool, makes it possible for operators to use it for long periods with very little fatigue.

The motor is mounted at right-angles to the blade and the drive is by helical gears. As a result, the saw rests in a balanced position on the main piece of the work; this means less effort, increased safety and a clean cut. The blade is completely guarded under all conditions; a pressed steel telescopic guard shields the lower part and its mechanism is completely sealed from sawdust.

Depth of cut is adjustable up to a maximum of just over 2½ in. Bevel cuts can be made up to an angle of 45 deg. and a depth of 2 in. The cutting line is kept clean by a volute on the inner surface of the guard which causes the sawdust to be ejected at the rear of the machine behind the operator.

A wide selection of blades is available for cutting timber, wall-board, plywood, stone, light sheet metal, corrugated asbestos, etc.



Crosscutting seasoned hardwood

An abrasive disc can also be fitted for cutting cement, brick and similar materials.

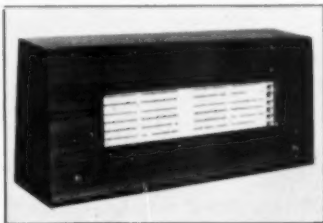
For convenient and safe handling of the tool, a strong steel carrying case with room for spare cable, blades and other accessories is available as an extra.

Enquiry Ref. No. F.9/1.

INSTRUMENTS

Production Time Check

FUNCTION of the Robinson production operation time recorder is to provide management with an automatic, immediate



Desk-top production-time recorder

ate and indelible record of the periods of operation of a number of different machines or processes. The instrument is supplied either in a walnut cabinet for desk use or in a metal case for wall mounting. It has a window 16½ in. wide across which a white, time-calibrated strip chart is driven at a speed of two inches per hour. To the right of the window are ten electric pens, each of which is connected to a separate machine.

When a machine is started, its associated pen draws a clear black line on the chart. As soon as the machine stops, the line terminates in a clear, square end. "Off" periods of as little as 30 seconds can be seen clearly from a distance of several feet. The pens do not use ink or fluid of any kind, cannot clog, require no cleaning, and will, it is claimed, last indefinitely without attention.

Light twin wire can be used to connect the instrument to individual machines. For most purposes, simple relays connected across the motor terminals of the machines are all that are needed to actuate the pens. If more detailed records are required, special contact arrangements can be made.

An interesting point is that the charting paper has a surface suitable for pencil-writing so that notes can be made on it for record

purposes. The recorder is stated to be low in price and inexpensive to run. It is covered by a six months' guarantee.

Enquiry Ref. No. F.9/2.

PROCESS EQUIPMENT

Clean Gas Cuts

CHIEF claim made for the T.53 Agtol-Lilliput sheet metal cutter is that it will cut sheet metal from 26 gauge up to ¼ in. as cleanly as a guillotine. Unlike a guillotine, however, it can cut in circles or to any desired shape; it can also cut a piece bodily from the centre of a sheet, drum or cylinder.

While cutting, the nozzle actually rests on the metal. This makes operation simple and, in conjunction with quick action of the special nozzles, prevents buckling of the sheet and the formation of slag.

Nozzles are machined from a heat-resisting copper alloy and are claimed to outwear conventional models because of their one-piece construction. The cutter can be



Cuts as cleanly as a guillotine

converted into a welding blowpipe by fitting the manufacturer's injector welding head.

Enquiry Ref. No. F.9/3.

GAUGES & TOOLS

Shoot Your Bolt

LATEST development of the cartridge hammer is represented by the *Tornado*. Fast, simple and safe to operate, it will fix permanently special steel studs or rivets in steel, concrete, stone, wood and a variety of other materials at rates up to 240 per hour. Pre-drilling or the use of dowels or plugs is not necessary. The steel bolts used can be supplied in a variety of different sizes and styles, including plain and drilled rivets or tapped bolts with male or female threads. Hooks, clips and



Pressing the bolt home in the taper of the barrel

eyes in many designs can also be supplied for use with the threaded bolts.

Among the exclusive features claimed for the *Tornado* are easy loading and ejection of the cartridge. Both operations can be performed without removing any components and only one thing is handled at a time. Loading is further simplified by the breech mechanism, which fully exposes the cartridge chamber when it is opened. These features make it possible to achieve the high rates of continuous operation quoted.

A few examples of the applica-

tion of the tool are: fixing steel or wooden window frames to concrete or brickwork; erection of switch and fuse boxes, conduit and cables; fixing of sheet to steel, wood or concrete structural members; erection of pipework, gutters, advertising signs, name plates, etc.

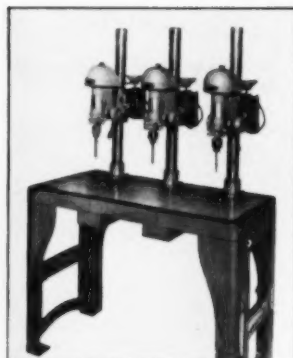
The muzzle of the cartridge hammer is covered by a bell-shaped cowl which acts as a silencer and splinter suppressor.

Enquiry Ref. No. F.9/4.

Gang Drilling

USEFUL saving in space and increased efficiency and output can be obtained by the use of multiple-head drill assemblies. Interesting newcomer in this field is the *Pacera* range. These machines are constructed on the unit principle and installations can be extended or altered very simply and quickly. All that is necessary is the addition of extra table and leg units and, of course, the machines themselves.

Drills are mounted on 15in. centres and intermediate drill tables can be supplied if required. A simple lifting mechanism for drill heads and tables is also available. The multiple tables have ground surfaces and incorporate a cooling trough. Supports are one-



Typical multiple head unit

piece castings, making the assembly strong and rigid.

Drilling heads with capacities of $\frac{1}{4}$ in., $\frac{1}{2}$ in. and 1in. can be fitted, giving speed ranges of from 80 to 9,000 r.p.m.

Enquiry Ref. No. F.9/5.

GENERAL EQUIPMENT

Plastic Driving Belt

"TRY it on your worst drive" is the invitation issued by the manufacturer of a revolutionary

HE'S STRAPPING THE SAFEST WAY

He's using Seal-less Strapping—the flat-band strapping system that doesn't need costly separate seals and saves time and materials by dispensing with wasted over-laps and cut offs. The Seal-less system really foils the pilferer—it's just not possible for him to open that package and do it up again.

Only the Seal-less system gives such security and safety—and it is wonderfully quick and simple. Even juniors can strap a package in a few seconds with the Seal-less machine. And there's a Seal-less machine suitable for every package, whatever its size, shape or weight. Extra efficiency is valuable—make sure your Packing Department uses Seal-less Strapping.

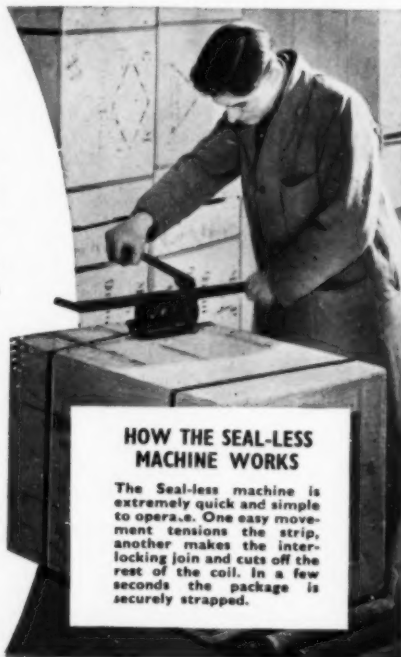
SEE THE ADVANTAGES FOR YOURSELF

The Seal-less system can be demonstrated on your own packing floor. Our representative will be glad to call on you. Just write or telephone to:—

SEAL-LESS STRAPPING LTD.

(Dept. 22) 19, SOUTHWARK STREET, LONDON, S.E.1.

Telephone: HOP 4400 (15 lines). Telegrams: Sunniest, Sedist, London.

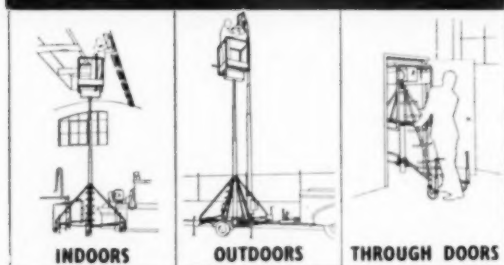


HOW THE SEAL-LESS MACHINE WORKS

The Seal-less machine is extremely quick and simple to operate. One easy movement tensions the strip, another makes the interlocking join and cuts off the rest of the coil. In a few seconds the package is securely strapped.

Rise
to the
occasion
with
the

"BEANSTALK"
A MOSS ACCESS TOOL



One man with a "Beanstalk" can reach any job up to a height of 18 to 30 ft., according to model. Raised and lowered by a telescopic ram, manually operated from the platform by means of a powerful hydraulic pump, the "Beanstalk" is sturdy and stable, yet highly mobile, and will span fixed objects in order to reach the most awkwardly-placed jobs in a few moments. In folded position it will pass easily through the average doorway.

Write for leaflet R5 to:—

WM. MOSS & SONS LTD.

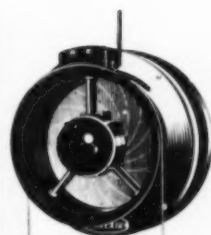
(Mechanical Developments Division)

BRAEMAR AVENUE, NEASDEN, N.W.10. Tel. GLAdstone 8283/4
Telegrams: "ACCESEQUIP" LONDON

TAL5955

SEPTEMBER, 1953

keeps air fresh
without draught



The XPELAIR keeps atmosphere fresh without admitting even a breath of draught. While windows are closed, it removes stale air and when the fan is stopped a new draught proof shutter automatically closes, stopping cold outside air from entering the room. No other window fan has this feature. Easily installed, quiet, uses less current than a reading lamp.

15,000 cu. ft. per hour **PRICE £15. 15. 0**
30,000 cu. ft. per hour **PRICE £19. 0. 0**
at your usual electrical suppliers.

The **XPELAIR**
shuts when it stops

a **G.E.C.** product

The General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2

103

new type of driving belt. It is made of a combination of a patented plastic material and chrome leather. The plastic is sandwiched between driving faces of leather and when bonded together the three layers provide a light and supple belt that will not stretch under the severest conditions. The plastic material is only a quarter the weight of leather, but is nine times as strong.

Because of its light weight, great strength and high coefficient of friction, the *Miracle* belt can do many jobs that are impossible even with vee belts, gear and chain drives. Extremely high speeds (up to 10,000 ft. per min.) can be transmitted and ratios of up to 40 : 1 handled. Centre distances may be as short as the pulley diameters will allow and the belting is claimed to be equally efficient on vertical drives, horizontal drives with tight side on top and drives without quadrant, jockey or slide rail adjustment.

Another feature of the belting is that it will resist damp, cold, heat, oil and benzine. It is made endless in all lengths and is supplied in widths of $\frac{1}{2}$ in. to 20 in.

Among the applications for which the manufacturers claim the new drive is superior to anything else available are: machine tools (in-

cluding grinders), wood-working machines, fans, compressors, power presses, hammer mills, cotton and woollen processing machinery and general engineering shop machinery. They are prepared to send a trial belt to anyone who wishes to take them up on the invitation quoted above.

Enquiry Ref. No. F.9/6.

Small Prime Mover

PARTICULARLY suitable for use on contractors' plant, agricultural machinery, Diesel-electric sets, etc., the new *Husky* Diesel engine has a single cylinder and is rated at 5-8 h.p. Speed range is 1,000 to 1,500 r.p.m., stroke 4 $\frac{1}{2}$ in. and bore 3 $\frac{1}{2}$ in.

The engine has been under development for four years and has been severely tested under working conditions in different climates. Design of the cylinder head allows the engine to run on low-grade fuels and provides easy starting and quiet running.

Ease of maintenance is ensured by the design of various components. The crankcase carries one integral and one detachable main bearing housing; this facilitates removal of the crankshaft. The big-end bearing is split at an angle to simplify removal of the connect-



Diesel generating plant driven by the *Husky* prime mover

ing rod through the cylinder bore. Cylinder liner is of the wet type and is renewable.

Pressure lubrication, well protected by filters, is used throughout. Cooling is by thermo-syphon in conjunction with cooling tanks or radiator and a simple governor controls the engine speed.

Either single flywheel or twin flywheels can be fitted and a half-speed power take-off can also be provided. Weight of the *Husky* (with single flywheel) is 500 lb.

Enquiry Ref. No. F.9/7



Phew! it's fast work in and out



MAGNETA

the faster

TIME RECORDER

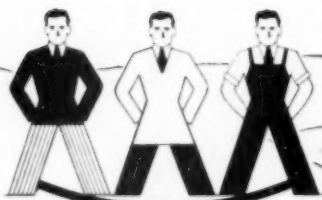
SPECIAL FEATURES: One-hand automatic action: mains or Master-clock control: two-colour recording systems.

Available on hire terms.

THE MAGNETA TIME COMPANY LTD., GOBLIN WORKS, LEATHERHEAD, SURREY

Telephone: ASHSTEAD 866





THE LIFE LINE OF
A LIVE BUSINESS!

The vitality of your whole organisation rests upon the efficient functioning of the line of communications linking its individual parts. On the rapid and accurate transmission of written instructions, on the smooth flow of paper-work and materials, on the successful integration of all operations its progress and prosperity depend. Lamson Carrier Tubes and Material Handling systems provide the answer to all such problems

LAMSON CARRIER TUBES AND CONVEYORS

Lamson Technical Representatives will be pleased to examine your special problems and advise on their solution. No obligation is entailed. Write to Dept. "D".

LAMSON ENGINEERING CO., LTD.

HYTHE ROAD, WILLESSEN, LONDON, N.W.10. Tel.: LADbroke 2424

*Grams: KELYWIL, HARLES, LONDON

LAMSON

BUILT TO LAST



Tearless Rapture!

Where the strain
is greater than usual:
Where stress points
call for extra reinforcement:

Apply with satisfaction

TUFFASEAL

tougher than the toughest tape yet

Let us
send you a sample
to try

JOHN GOSHERON & CO LTD
GAYFORD ROAD LONDON W12

Telephone
SHE 3326

Gosheron for strength in TAPES

CANTEEN EQUIPMENT

Tough Tablecloths

HARD-WEARING PVC tabling is now supplied by one manufacturer in about 50 different designs, most of them in five alternative colours. Advantages of this material for canteen use are that it does not crack at the edges of the tables, and is unaffected by all but the hottest dishes. The only "laundering" necessary consists of an occasional sponging with a damp cloth. Width of the tabling is 45in.

The same material in two weights is available as ready-made cloths, with edges hemmed.

Enquiry Ref. No. C.9/1.

Plastic Covers

THE use of plate stacking covers in canteens saves valuable counter space and helps to speed service. One manufacturer is now marketing plastic covers in two sizes:—7½in. diameter by 2½in. high; and 9½in. by 2½in.

Also available from the same manufacturer is a neat dust-pan in either cream or green plastic.

This, it is claimed, is more hygienic for kitchen use than the enamelled type, which is liable to chip and rust.

Enquiry Ref. No. C.9/2.

Mobile Canteen

SPECIALLY designed electric vehicles provide evidence of the increasing attention which is being paid to the problem of giving hot food to people who are working at a distance from the main canteen or cooking centre.

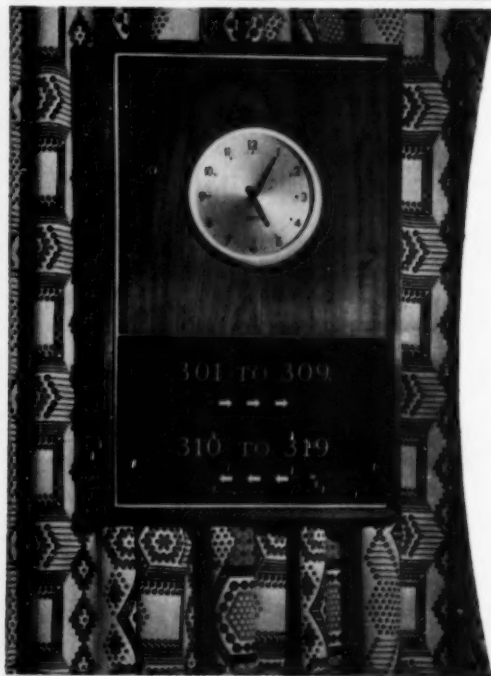
One manufacturer has now introduced two models which are of special interest to canteen controllers. The first has an enclosed body with a partitioned, lined and racked interior which can be electrically heated before the vehicle sets out on its journey. Hospitals find them useful for serving patients in wards that are scattered over a wide area.

Another model (see illustration) takes the form of a shop and is readily adaptable as a mobile canteen. This one is also available on a petrol driven chassis.

Enquiry Ref. No. C.9/3.



This mobile shop may be used as a canteen serving hot meals "on the site" to outdoor workers



Photograph by permission of Architectural Review.

"The right Time for Life"

The headline of this advertisement, we feel, adequately conveys the real value of a Gents Controlled Electric Clock System.

The complete installation of 24 standard slave clocks and a number of special architect designed slave clocks, all controlled by one Master Clock, ensures accurate uniform time throughout the new Time-Life-International Building, New Bond Street, London.

Precisely the same accurate time is available for your establishment if you specify a . . .

GENTS'
OF LEICESTER

**Controlled Electric
Clock System**

Fully illustrated details are available free on request, along with a list of other notable users.

GENT & CO LTD · FARADAY WORKS · LEICESTER

London Office and Showrooms: 47 Victoria Street, London, S.W.1.
Also at NEWCASTLE · BIRMINGHAM · BRISTOL and
GLASGOW and agents in 51 countries throughout the world.

Dropping a Hint on INDUSTRIAL HYGIENE



Thanks to Homacol 'Drop-by-Drop' Liquid Soap Service, cleanliness goes hand-in-hand with economy in the staff wash room. Homacol Dispensers give just enough soap for a rich cleansing lather. No waste. No pilfering.

Systems

★ Write now for full information to:

THE HORTON MANUFACTURING Co Ltd
RICKMANSWORTH HERTS

Telephone:
Rickmansworth, 3191

Telegrams:
"Liquisopa" Rickmansworth

E.52

KOPE-CREME

Antiseptic Handstain Remover



Quickly Removes Ink Stains caused by handling Printing Machines, Duplicators, Typewriter Ribbons, Carbons, Ball Pens, Stamp Pads, etc.

Rub a little KOPE-CREME into the Dry stained hands, and when loosened wipe clean with a duster.

For excessive staining squeeze an inch or more, rub in and rinse off with water.

Retail Price 3/- per Tube
TAX FREE



Supplied in
Cartons of 1
Dozen Tubes

Also in Liquid form 4oz 3/-, 8oz 5/-, 20oz 10/6 Bottles

The **Standard**
OFFICE SUPPLIES COMPANY
57, FARRINGDON ROAD LONDON E.C.1.

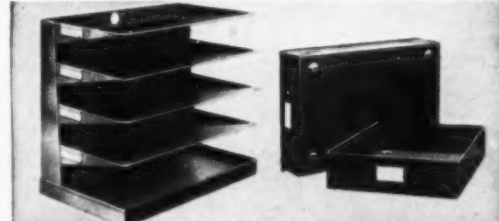
Harvey



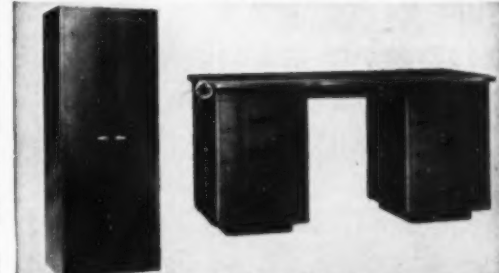
STEEL STATIONERY CABINETS AND CARD INDEX CABINETS.



STEEL BOOK RACKS AND STEEL WASTE PAPER TUBS.



STEEL LETTER RACKS AND LETTER TRAYS.



STEEL CUPBOARDS AND DOUBLE PEDESTAL STEEL DESKS.

All Harvey Steel Furniture and Equipment is of modern design, sound construction, and of the highest quality. Finished in Olive Green stoved enamel it is perpetually durable, fire-resisting, and proof against damp and vermin. Prices are competitive. Send for Catalogue No. BU 800.

Harvey

G.A. Harvey & Co. (London) Ltd.
Woolwich Rd. London S E 7

EXCELLENCE UNSURPASSED



Experience proves that the discriminating buyer will insist upon "SELLEX". No other wood furniture offers more in appearance, in efficiency, in rugged construction. The name "SELLEX" sets a standard by which others are judged.



Obtainable from your usual suppliers.

S. EPSTEIN LTD. Beachy Rd., Old Ford, London, E.3. Tel: AMHurst 3633

Est. 1886

IT'S WONDERFUL WHAT A RUBBER BAND WILL DO!



Almost every manufacture has one process or more in which rubber bands—of a suitable size and gauge—can speed up production and cut costs. We will gladly send an expert to show you where and how rubber bands could save you time and money. Simply 'phone or write to us:—

COOMBS of WIMBLEDON

Sole makers of 'STANDARD BRAND' Rubber Bands (Samples on request. Please mention this publication)

H. A. COOMBS LTD.
Standard Works, Richmond Road,
Wimbledon, S.W.20.

*Phone: WIMbledon 6555.
*Grams: Absentment, Wimble, London.



Eltray SAVES STENCILS

Stencils are usually discarded after a single run for lack of suitable storage. With the new Eltray system they can be kept in perfect "working order" and used again and again. The used stencil is always accessible, found at a glance when a further run is required.

The cabinet is stove enamelled in wrinkle finish. Each of the six drawers in smooth eggshell grey holds 25 stencils on separate frames preserved permanently in a transparent non-stick wrapper. Single drawer units available.

Full particulars from:

ELTRAY FILING SYSTEM LTD
10, Tottenham Mews, W.1.

Telephone: LAngham 2226.

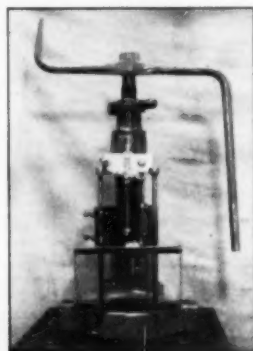
Business EQUIPMENT SURVEY

WELFARE EQUIPMENT

Interlocking Action

IMPORTANT feature of the Arrestapress guard for hand presses is that the ram cannot descend, however much force is used, until the guard screen is closed. A spring action at the beginning of the upstroke allows the ram to rise, however, whether the screen is open or not.

This interlocking action operates from all starting positions and requires no adjustment. A



small pedal unit working a flexible cable enables the guard to be closed by foot as well as by hand.

The screen itself is adjustable to suit special tooling. Unlike guards of the sweep-away type sometimes fitted to hand presses, the Arrestapress is not affected by the size of the tools, the daylight clearance between them or the length of the stroke.

Enquiry Ref. No. W.9/1.

Quick Cut

LIKELY to find an application in the upkeep of factory grounds and sports fields, the Easimow 16in. motor mower departs from the usual style of machines of this size in that it carries the operator. It is claimed to cut grass 30 per cent. faster than pedestrian types.

An interesting point is that the operator's weight virtually acts as the roller. For travelling over paths, etc., the cutters lift clear of the ground, and, with light trailer attached, the mower can be used as a miniature tractor.

The 98 c.c. motor drives by one chain to a totally-enclosed epi-

cyclic reduction gear, which embodies a smooth-operating band clutch. Strength and stability are provided by the triangular tubular frame, while twin rollers enable turns to be made without damaging the lawn. The machine is fitted with a large, detachable grassbox.

Enquiry Ref. No. W.9/2.

Economical Detergent

ALTHOUGH developed 11 years ago, *Teepol* detergent has been more or less limited since then to specific industrial uses. Now, however, it is available for general cleaning purposes in one-gallon and four-gallon tins and 45-gallon drums.

Teepol is recommended for washing floors, paintwork and furnishings, and for all-round use in canteens. It forms no scum, leaves no odour, and is both non-corrosive and non-abrasive. Owing to its high concentration, it is very economical.

Enquiry Ref. No. W.9/3.

Chemical Toilet

THE provision of efficient toilet facilities for workers dispersed out-of-doors is a problem which faces many firms. They will be interested in the *Universal* chemical toilet, a two-container model with detachable wooden seat and lid. The outer container, of medium gauge steel finished in stove enamel, has a broad base to



ensure stability; the inner one is galvanized, incorporates a patent urinal guard and has a neat carrying handle with ribbed rubber grip.

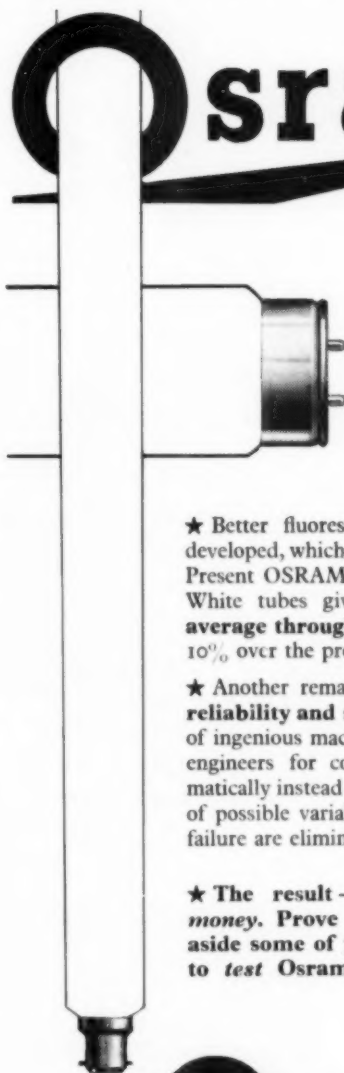
This toilet is intended for use with *Racasan* self-cleaning sanitary fluid, which assists normal breakdown and thus enables the sewerage to be dug into the ground (its manurial value is not impaired) or disposed of safely into a water carriage system. Normal charge is $\frac{1}{2}$ pint of fluid in a 1-in. to 1½-in. depth of water; this lasts until the toilet is full.

Enquiry Ref. No. W.9/4.

important developments in

Osram

TUBES



★ Better fluorescent powders have been developed, which now give **MORE LIGHT**. Present OSRAM 5 ft. Daylight and Warm White tubes give **45 lumens per watt average through life**—an increase of over 10% over the previous figure.

★ Another remarkable improvement is in **reliability and stamina**. Through the use of ingenious machinery designed by Osram engineers for coating the cathodes automatically instead of by hand the chief causes of possible variable performance and early failure are eliminated.

★ The result — more light for less money. Prove this for yourself — set aside some of your fluorescent fittings to test Osram tubes over a period.

Osram

tubes for STAMINA

A S&C Product. The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2



Yes, I can
hear you
perfectly . . .

How many of your work people and colleagues
can say that whenever they are on the phone?

Yet the installation of a BURGESS ACOUSTI-BOOTH—which is simple and inexpensive—ensures perfect audibility in the midst of the loudest and most persistent noise. There are wall-booths (illustrated) for factories, workshops, foundries, etc., and neat desk models for offices. Bulletin BP141F tells you all about them—free on request.

BURGESS acousti-booth

for quiet amid clatter

THE BURGESS PRODUCTS CO., LTD., HINCKLEY, LEICS.

THE LIABILITY IS YOURS

Slippery floors are dangerous and unnecessary. All who hold positions of responsibility whether in Offices, Municipal Buildings, Hospitals, Hotels, etc. should insist that a *non-slip* polish is used in the interests of safety and efficiency.

FURMOTO

NON-SLIP FLOOR CREAM

Supplied in $\frac{1}{2}$, $\frac{1}{4}$ and 1 gallon tins
also in 5 gallon drums

Sole Manufacturers:

FURMOTO CHEMICAL CO., LTD.
1/3 BRIXTON ROAD, LONDON, S.W.9.

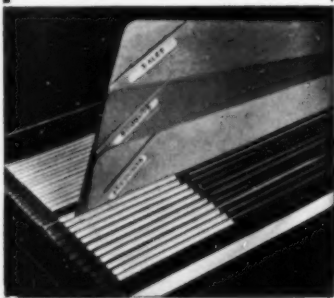
BETTER FILING at LOWER COST

A new approach to an old problem

'REFEREADY'

(A RANDALL PRODUCT)

Top class suspension filing a practical
proposition for all departments.



Write for details of all RANDALL PRODUCTS and
when in town inspect for yourself in our showroom.

RANDALRAK LTD

Dept. 'B'

106 Victoria Street, London, S.W.1.
Phone: VICTORIA 3485/4238

TRANSPORT MAINTENANCE

Continued from page 68

past serve to emphasise the ever-growing need for efficient maintenance as the only means of keeping delivery costs within reasonable bounds.

Tyre maintenance is regarded as one of the most important departments of servicing. To obtain maximum tyre life, it has been found necessary to carry a stock of wheels fitted with part-worn covers, so that in the event of tyre failure twin wheel equipment can be "married." To fit a new cover when its twin is half-worn would result in the new cover taking far more than a fair share of the weight, with resultant rapid wear; in fact, it has been known to cause the bursting of the new tyre. A fortnightly check of tyre pressures is found to be sufficient.

Of particular interest is the successful manner in which existing buildings constructed for entirely different purposes have been adapted to the requirements of a very up-to-date garage and maintenance department for commercial vehicles.

The premises were inherited from the old stabling department of Allsopp's brewery and from Ind Coop's cooperage department. Above the present workshops, the original lofts can still be seen, together with pulleys for hoisting fodder. A further link with the days of horse-drawn vehicles is afforded by the cobbles which still cover most of the yard.

Old Buildings

Incorporated in the old stable buildings is a drying-room for the men's clothes, together with up-to-date wash-rooms and lavatories. All basins are supplied with hot and cold water and electric hand dryers are provided. A comfortable "cabin" is available for the use of drivers.

The original blacksmith's shop is still in service, but hammer and anvil have been superseded by electric and oxy-acetylene welding; and forging, though still employed to a very limited extent, has largely given place to fabrication. The department produces quite a number of body parts, a typical example being the fabrication of staunchions and chains.

Wooden parts are produced in a body shop which was the old wheelwright's shop of horse-drawn days.

In a small but very compact engine-house, petrol engines are completely overhauled or rebuilt, apart from the grinding of the crankshafts and the remounting of bearings. This work is undertaken for the entire Ind Coope and Allsopp organisation in Britain, including the Romford brewery. There is also a small machine-shop with a motorised lathe and a variety of special-purpose equipment. This includes a hydraulic press for liners, a machine for re-boring cylinder blocks and fitting cylinder liners, and a Black and Decker valve refacer. An unusual tool is a *Delepena* precision honing machine, which replaces a reamer. To facilitate the handling of cylinder blocks in the re-boring machine, a hoist of a novel type has been designed and built by the department.

The body spray paint shop is fully air conditioned and equipped with fireproof electrical fittings.

Cleanliness

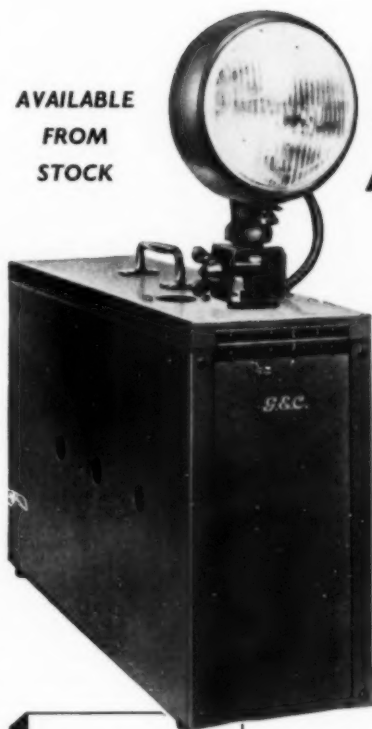
A feature of the establishment is the very high standard of cleanliness achieved throughout. This is ascribed to the company's policy of providing light work for employees who have reached the end of their normal working life. Some of these older men for whom jobs must be found take a very marked pride in keeping the premises spick and span.

When the accommodation provided by the former stables became congested, it was decided to transfer the private cars to the old Ind Coope coo-perage property across the road. The floors have been levelled and an under-cover wash has been provided. The rest of the space is used for the storage of loaded vehicles, the parks provided being labelled A, B and C. It is not practicable in the space available to give each vehicle a stable of its own, but every vehicle is under cover and is parked in the appropriate block in a position which has been carefully selected to ensure easy egress the following day.

An old boiler-house is at present being converted into another block for tankers and heavy vehicles.

IN ANY EMERGENCY

AVAILABLE
FROM
STOCK



POWER FAILURES,
SHORT CIRCUITS,
ACCIDENTS, FLOODS,
etc.

THIS
G.E.C.
EMERGENCY
LIGHTING SET
automatically
TAKES OVER

Totally self-contained with lamp battery and charger in one case. Completely automatic. Always kept fully charged from the mains. Renewal of mains supply after failure immediately resumes charging. Operates on 100/120v or 200/250v A.C. supplies of 60/100 cycles. Each unit lights one or two 6v lamps up to a maximum of 60w.

A sudden blackout is always inconvenient, sometimes dangerous and possibly fatal. Fortunately you can completely eliminate the risk of damage or danger from light failure by installing one or more G.E.C. Emergency Lighting Sets at strategic points. You can then forget your fear of power failure from whatever cause. Whenever the mains go off these G.E.C. Emergency Lights automatically switch on, providing adequate illumination at the crucial moment of break-down and for anything from 1½ to 5½ hours afterwards, according to the lamp used.

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

BUILDING THE MODERN OFFICE—Continued from page 76

The importance attached to a visitor's "first impressions" is reflected in the increasing care taken in the design of entrances to industrial office buildings.

An entrance hall is not only a way into a building; it also serves many other purposes, and should, therefore, be carefully planned. The important requirements are that it should be spacious, provide adequate guidance to casual visitors, and act as a check and control point and as waiting space for visitors who cannot be dealt with immediately.

Entrance Details

Provision must, therefore, be made for pleasant, draught-free waiting space, adequately furnished; a comprehensive directory which indicates the personnel of the building; and a space for commissionaire or receptionist, together with such items as clocks and visitors' lavatories. In many cases, the telephone switchboard is also situated in the reception area and in some smaller units the telephone operator acts as receptionist. A G.P.O. telephone box in the entrance hall will be appreciated by both employees and visitors and will help to eliminate the use of the company's telephone system for personal calls.

Staircases should be planned in convenient positions and should be adequate in size, according to their importance. If a building is more than two or three storeys in height, a passenger lift and a goods lift for carrying furniture, parcels and office stores are essential.

Multi-storey buildings require adequate means of escape in the

case of fire, planned to meet the requirements of both the local authority and the fire insurance companies.

Adequate, well-ventilated cloakrooms on each floor will encourage people to keep wet clothes and other articles in the proper cloakroom, rather than following the untidy practice of hanging them in individual offices. Lavatory accommodation is required on each floor for both men and women, and in some cases separate suites are provided for directors and senior staff.

Natural ventilation is normally provided for these units, with artificial and natural lighting; but in large buildings lavatory units can be mechanically ventilated and artificially lit, provided they are carefully designed and adequate. The advantage of such an arrangement is readily seen in multi-storey buildings, where it allows lavatory accommodation, lift, cloakroom and staircase unit to form a centre core with office space naturally lit around the perimeter.

In office buildings where large numbers of women are employed, a rest room is desirable. This should, obviously, be in a quiet part of the building, be comfortably furnished and pleasantly decorated, with direct access to lavatories.

Decoration

Decoration will vary a great deal according to the type of office and the amount of money available. Important rooms such as conference rooms and boardrooms may be panelled, using one of the very attractive wood veneers now

readily available. General offices however, which are not subject to heavy wear, can reasonably be finished with a plaster surface to permanent walls and either discoloured, painted or papered.

For large general offices, light-coloured ceilings are desirable (although in entrance halls and showrooms, where special effects are required, this rule does not apply). For pleasant working conditions, light pastel shades are most satisfactory for the walls; a dado to window-sill height, in a more durable finish, can be provided to reduce cleaning.

A cheerful effect can be obtained in certain offices by the use of pleasantly designed curtains, or flower boxes or plant containers, which are very common in Swedish office buildings. If the building faces due south or has the problem of sun glare through large windows, curtains are not always a satisfactory solution; in such cases, slatted venetian blinds of gay aluminium can not only provide an effective method of sun control but can add an attractive item of colour to the room.

3 MACHINES
IN ONE

ANALYSES
ADDS & LISTS

REGNA

**the CASH REGISTER
to RECKON WITH**

from £90 H.P. TERMS



Analysing
Adding and
Listing up to
£999 19s. 11½d.
Guaranteed
Service

Gives instantaneous
finger-touch recording of every cash transaction

May we demonstrate

1. Individual sales

2. Paid out

Agents everywhere

3. Credit Sales

Deliveries ex stock

4. Accounts received

5. Daily turnover

THE REGNA CASH REGISTER CO.
Proprietors: The Joell Safe Co. (London) Limited
Telephone Trafalgar 3718

7, York Place, *Adelphi, *London, W.C.2.



But for Advertising Gifts—Place your order NOW for widest choice and best attention.

Reedoh

RANGE

Illustrated catalogue and price list B/S from:
RICHARD HOCHFELD (LONDON) LTD.,
28 ARCHWAY RD., LONDON, N.19.
*Grams: Reedoh, Norphone, London. Tel: ARC 4388

QUIZ

...FOR MEN
IN EXECUTIVE
POSITIONS

1. Boiler flue cleaning today can be a clean and simple operation. Why is this?
2. How can you load, convey and bag cement under dust-free conditions?
3. How can you quickly and efficiently drain machine sumps which have no bottom outlet?
4. How can you best reclaim valuable dusts?
5. How can you best remove loose 'fly' from textile machinery?

Answers to all these questions will be found in an informative booklet 'The Versatile Vacuum'—all about modern methods for removing, conveying and reclaiming of industrial dusts and fragments. May we send you a complimentary copy?

B.V.C.
BRITISH VACUUM CLEANER

**INDUSTRIAL VACUUM
CLEANERS**

THE BRITISH VACUUM CLEANER & ENGINEERING CO. LTD.
(Dept. 1/A1) GOBLIN WORKS, LEATHERHEAD, SURREY.

SEPTEMBER, 1953

**SPEED
and ECONOMY
in TRANSPORTATION!**



Dart Pneumatic Despatch Tubes

For Inter-Departmental
Transmission of Mail Orders, Records,
Invoices, Messages, etc.
The Dart Pneumatic Tube System transmits
documents at 30ft. per second, linking
up every department and floor—
in Factories, Warehouses, Offices, etc.

Cash Centralization
in Modern Stores.
Counter Terminal
Fitting.



DART CASH CARRIER

COMPANY LIMITED, EST. 1919.
CAMPBELL ROAD · STOKE-ON-TRENT Phone: 44317

BISLEY



*Proof
against
Rust and
Rodents!*

FITTED 4 LEVER LOCK,
2 KEYS.

ADJUSTABLE SHELF.
EXTRA SHELVES
AVAILABLE.

SIZE APPROX
36 in x 18 in x 15 in

Steel CUPBOARDS

F. C. BROWN,

BISLEY, SURREY

Save Labour for more important work

Use this Automatic

STRING TYING MACHINE



Supplied in two sizes.
16in. Tyer makes single,
double or cross ties on
packages up to 16 x 9in.

34in. Tyer places a double
wrap of twine around
stacks of rigid boxes and
bundles up to 34 x 25in.

- Saves Time, Twine
and Labour
- No skill required
to operate
- No adjustment for
different sizes

Further particulars and
demonstrations at Head
Office and Sales:

CROXETED

MANUFACTURING CO., LTD.
52-54, HIGH HOLBORN, LONDON, W.C.1.

Telephone: Holborn 5571

PARK YOUR CYCLES

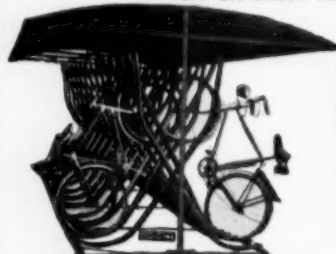
THE ODONI WAY

(REGD. TRADE MARK)

With Odoni Patent "All-Steel"

BICYCLE STANDS

Tynes to suit all possible requirements
Single or Double-Sided. Horizontal or Semi-Vertical
For Indoor and Outdoor use.



TYPE 10

DOUBLE SIDED
SEMI-VERTICAL
OUTDOOR
STAND, BUILT
WITH CLOSE
RACK
ARRANGE-
MENT (CYCLES
AT 12"
CENTRES)

Write for fully illustrated leaflet and price list to
Sole manufacturers and Patentees.

ALFRED A. ODONI AND CO. LTD.,
SALISBURY HOUSE, LONDON WALL,
LONDON, E.C.2

Tel. No.: (WORKS: LONDON, N.W.) Tel. Add.:
MONarch 8638-9 Odoni, Ave., London

CARTONS DISPLAY BOXES

AMHera



3261/4

ESTABLISHED 1888

*Experience
Counts!*

BRITANNIA FOLDING BOX CO. LTD.
DACE ROAD . OLD FORD . LONDON

Your time is valuable - make every minute count

Save time and increase your office efficiency with a **Dimafon**—a portable dictating machine which combines simple operation and outstanding performance with the lowest running costs.

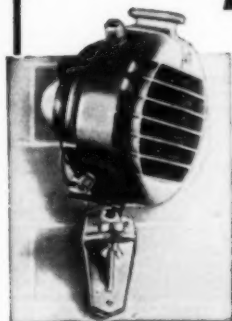
You simply press a button and speak—the microphone picks up your words faithfully. Whether you speak loudly or softly, fast or slow, every word is accurately recorded. You find yourself concentrating more easily—producing more and better work. You work to your own rhythm, dictating when it suits you and as ideas take shape in your mind. You get rid of most of your routine correspondence at odd moments in between appointments during the day.



Clear Your Desk for Action! -with the New **Dimafon**

* Write or telephone for further details, illustrated brochure or demonstration to—
ROYAL TYPEWRITERS—27 Bankside, London, S.E.1. Tel: **WATerloo 7551/8**

Now is the time to consider your *heating*



Good heating and ventilation are business assets. The 'SPIRALUXE' gives you both in one compact Unit. On cold days, it provides comfortable, even warmth rapidly, and eliminates cold spots. When the weather is hot, the fan can be run independently to promote air circulation. The 'SPIRALUXE' is smartly designed and sturdily constructed to give years of trouble-free service, and is attractively finished in Polychromatic Blue or Bronze. It is available either as a Portable Model or for Wall Mounting (2 Kilowatt or 3 Kilowatt), for operation on single phase electricity supply only. 12 months' guarantee. Full details are contained in List No. 97 FREE on request.

★ **UNITS POSTED SAME DAY AS ORDERS RECEIVED.**

SPIRAL TUBE
Unit Heaters

SPIRAL TUBE & COMPONENTS CO., LTD.
OSMASTON PARK ROAD, DERBY. Tel.: DERBY 48761 (3 lines)
Head Office: Honeypot Lane, Stanmore, Middlesex.

Overalls FOR ALL TRADES & PURPOSES

BOILER SUITS



BIB & BRACE OVERALLS

APRONS, etc.,
for MEN and
WOMEN,
COATS,
JACKETS.

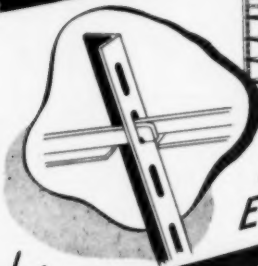
The "VOLE" Brand

RIGMEL SHRUNK

Write for PRICES and PATTERNS

H. WHEELER & COMPANY LTD.
107 London Road, Plaistow, London, E.13
Phone : GRAngeWood 4701 (5 lines)

SLOTTED ANGLE



**STORAGE
EQUIPMENT**

by

Welconstruct

**INEXPENSIVE
ECONOMICAL...**

the Slotted Angle method of shelf erection has been brought to perfection by WELCONSTRUCT. Always complete yet never finished, Welconstruct Shelving will store anything in your Works, Warehouse or Shop. Our free illustrated brochure will tell you more, so write now for List 'B' to:

THE WELCONSTRUCT CO., LTD.
GRENVILLE BUILDINGS, CHERRY ST. BIRMINGHAM, 2
Tel: MIDland 1691.
CYCLE RACKS • BINS • LOCKERS • WORKPANS

we can help to sell your products...

During the last half-century we have specialised in stimulating sales for many enterprising business concerns. We have continually held our finger on the pulse of all industrial markets and have acquired an intimate knowledge of the right sales approach.

Our service department, staffed by a fully qualified team of experts, is ready to advise and assist you.

G. F. TOMKIN LIMITED

designers of fine
sales literature



copy writers and
colour printers

501 GROVE GREEN ROAD, LONDON, E.11

... telephone
LEY 1164/1165/7396

Keep your factory **CLEAN**

WITH THE

Secomak

**MODEL 51
INDUSTRIAL
VACUUM
CLEANER**



- Twin motors Universal AC/DC, 1200 watts.
- Dust bag capacity: 1½ Cu. ft.
- Weight only 110 lbs.
- Quick fitting adaptor instantly converts machine to high velocity blower-hot or cold air.

Speed, economy and ease of handling are star points with this exceptionally powerful Industrial Vacuum Cleaner. It will rid your factory of money-wasting dust, dirt and swarf—and do it cheaply and quickly. Light weight, compact design, and pneumatic-tyred wheels ensure effortless "one-man" handling even in confined spaces. The large capacity dust bag can be removed and replaced in a few seconds.

Approved by Factory Inspectors

Write for Data Sheet 511/50/B

SERVICE ELECTRIC CO. LTD.,
SECOMAK WORKS, HONEYPOT LANE, STANMORE, MIDDXX.

Telephone: EDGware 5566-7-8-9.



THE WAY to a BIGGER SALARY

If you are sincere in your determination to earn a bigger salary, the vital question you have to ask is "How can I best get the specialised training which I need?" There is a way—profitable and fascinating through the Home-Study Courses of The School of Accountancy.



The School's Courses in Accountancy, Secretaryship, Cost Accountancy, Management, etc., have led thousands of former students to positions as Directors, Managers, Chief Accountants, Company Secretaries, Cost Accountants, Works Managers, Office Managers, Auditors, Stores Controllers, etc. There are also Introductory and Junior Courses for younger men.

Thousands have made in TWO years the progress which otherwise would have taken TEN

The top men in innumerable concerns to-day were School of Accountancy-trained 10, 20—even 40 years ago. The bigger-salaried men of the future are now being trained by The School of Accountancy. Why step aside whilst other men step ahead? You, too can make your future secure. Let your action to-day be evidence that you seek and deserve success.



Send for this 100 page Guide to Careers.

Read it. Spend one evening quietly in your own home thinking about your future. It may well be the turning point in your career. For the sake of a brighter future, act now.

The School of Accountancy

56, Regent House, 6, Norfolk Street, Strand, London, W.C.2.
And at Glasgow.



worth an
extra pair
of hands

to the busy
business ex-
ecutive.

For the first
time you need
not hold the
phone.

Your hands are
FREE to write,
type, refer to
books and
papers whilst
you talk. You
may get up, walk
around, go to
reference files
and still carry
on your con-
versation.



Enquiries to:—

FONADEK (BRANSON) LTD.

Dept. B.2. Vivian Road, Birmingham, 17. Phone: HARborne 2267/8

TIME RECORDS and Cost Control



Time is a fundamental
factor in production costs.
The Gledhill-Brook Re-
corder provides all neces-
sary data mechanically,
legibly accurately and in
unit form for analysis and
filing. There is a Gledhill-
Brook system for your
works.

GLEDHILL-BROOK

TIME RECORDERS AND COSTING SYSTEMS

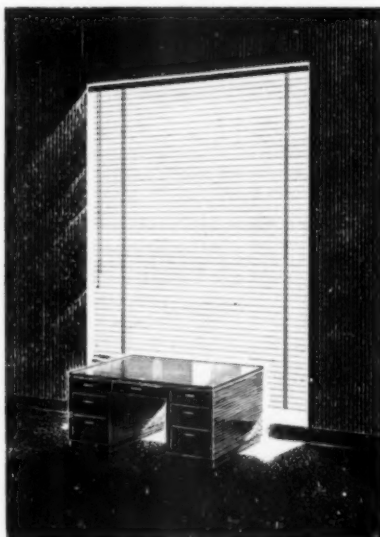
Enquiries to:

GLEDHILL-BROOK TIME RECORDERS LIMITED
38 EMPIRE WORKS - HUDDERSFIELD

STRIKINGLY
ATTRACTIVE

REASONABLY
PRICED

EFFICIENT



The Finest Edition of the New Flexible
ALUMINIUM VENETIAN BLIND

Streamlined, All Metal, in Many Colours for Offices and Factories

Just pin this to your notepaper, for a sample slat.

"Britain's Leading Blindmakers"

J. AVERY & CO., (Est. 1834) LTD.

81, GREATPORTLAND STREET, LONDON, W.1. Museum 9237

SEPTEMBER, 1953



INDUSTRIAL STEEL SHELVING

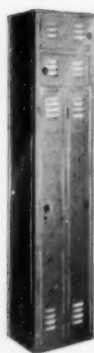
Storage Bins, Clothing Lockers, Cupboards

Makers of Steel Storage Equipment for 25 years

JOSEPH WESTWOOD & CO., LTD.

Napier Yard, West Ferry Road, Millwall, E.14.

Phone: EAST 1043 (4 lines)



Quality at the RIGHT PRICE

Helmman

TWIN TYPE
STEEL CLOTHES LOCKERS

These lockers provide separate accommodation for two persons and take up 37½ per cent. less wall space than old-styled lockers.

OTHER TYPES ALSO AVAILABLE

Price
£4 - 15 - 0
per person

£9 - 10 - 0 per Twin
Lockers.

Standard size 72" x
15" x 12", other sizes
15", 18" and 20" deep
(the last two sizes
have rails for coat
hangers).

The

"VEDETTE" ALL STEEL DESK

Nine drawers for each unit, removable shelves in cupboard. Available with two drawer units, two cupboard units or one pedestal and plain leg. Size 48" x 24" x 27½" high. Finished stove enamel, with lino top.

★

Mr. Quin at
Larkwood
4411 will
answer your
enquiries.

As the makers we offer:
Quantity discounts; Special
prices for complete installations;
Normal business credit
terms; Prompt delivery;
Choice of colours.



Free Delivery
London Area

Price from
£12 - 9 - 9
plus tax £2 9-3

(as illustrated
£20-15-3 plus tax
£4-1-9)

Choice of ten
designs.

W. B. BAWN & CO. LTD. Byron Wks, Blackhorse Lane, E.17

HILL BROTHERS SERVICE offers

Transfer blocking foils • Display boards
Protective glazing film • Metal struts
Water slide transfer film • Acetates
Pins • Rings • Double gummed manilla
Coloured gummed papers • Guillotines
Hot process stamping outfits • Bevellers
Electric finishing presses • Blocking types
Blocking dies • Cutter crush types
Cutter crush dies • Hand engraved blocks
Showcards and tickets

MASSELEY SHOWCARD MACHINES

Rebuilt and Guaranteed by

HILL BROTHERS (SERVICE) LTD

ACTON WORKS, BEACONSFIELD ROAD, ACTON GREEN
LONDON W.4. Telephone: CHISWICK 2235

THE POLYTECHNIC

309 REGENT STREET, W.1.

Department of Management Studies

EVENING COURSES

Intermediate Certificate and Diploma in Management Studies.

PART-TIME DAY COURSES

Courses for (1) Foremen; (2) Office Supervisors
Job Relations for Professional Workers
Interviewing Techniques of Management
Communication and Report Writing
Management Accountancy; Statements to the Board
Statistical Method in Market Research
Commercial and Industrial Forecasting
Industrial Specification and Quality Control
Work Simplification in the Office. Form Design
Clerical Work Measurement, Planning and Control
Legal Background for Policy Making
Problems and Techniques of Modern Incentive Schemes

FULL-TIME DAY COURSES

Social Techniques of Management: Full-time attendance one fortnight a term for three terms, together with part-time attendance on 15 half-days for training projects.

Industrial Relations and Productivity: One-month courses for Trade Unionists and Workers' Representatives.

Autumn Term commences on 28th September, 1953. Applications are invited for part-time and full-time day courses. Enrolment for evening courses: 21st September, 5-8 p.m.

Prospectuses and detailed syllabuses may be obtained from the Director of Education.

NOW READY

THE ENLARGED, COMPLETELY REVISED, 1953

Advertiser's Annual

NO OTHER PUBLICATION, or combination of publications, so exactly meets the needs of the Advertising or Sales Executive as the 1953 ADVERTISER'S ANNUAL. From no other source can you get the wealth of current, ready-to-use information it provides—except with an immense amount of work, and at prohibitive cost.

With the ANNUAL alone you can: plan a complete advertising campaign down to the last detail; find space rates, sizes, press days, etc., of British and overseas publications; list potential buyers of space and supplies; compile and extend your mailing lists; learn the latest details about advertising agents and their clients—find instant, reliable answers to some 150,000 everyday questions concerning every phase of advertising, selling and marketing.

Supplies low: order NOW

Now that pre-publication orders have been met, very few copies are available. To secure one of them, FILL IN AND POST THIS COUPON TODAY.



Business Publications, Ltd., 180 Fleet Street, London, E.C.4

Please send me by return one copy of the 1953 ADVERTISER'S ANNUAL. Invoice me on despatch at the post-paid price of 40/-.

Name

Address

B/AA2

(Overseas orders must be accompanied by cash)

CLASSIFIED ADVERTISEMENTS

RATE—5/- a line (average 45 letters per line). Minimum 3 lines costing 15/-; each additional line or part of a line 5/-. Box No. counts as one line and is to be paid for; replies are forwarded free of charge, 2½% discount for 6 insertions, 5% for 12. Payment with order for single insertion.

FILING EQUIPMENT
IMPROVED LETTER FILES. Ask for list. Gazebo, 57 Packington Road, Acton, London, W.3. ACOrn 4731.

FOR SALE
Complete Installation Powers-Samas 36-column Accounting Machines, including Automatic Key Punches, Automatic Verifier, Sorter, Multiplier, Tabulator and Summary Card Punch; 1948 models, in use 4½ years. In excellent condition. Enquiries for individual items considered. Apply, The Cementation Co., Ltd., Slaidburn, Nr. Clitheroe, Lancs. Tel.: Slaidburn 228.

Copycat printing unit, drier, set of trays, squeegees, etc., also small lots of chemicals and paper. Box 1200 c/o Business, 180 Fleet Street, E.C.4.

Hand Model Comptometer. Re-built February, 1950, and regularly serviced, £60 or near offer. Apply Allen Fairhead & Sons, Ltd., Enfield, Middlesex.

Powers 21-column equipment, 97 card trays, 29 clips and three cabinets to hold 24 trays each in good condition. Offers to Malpas, Simmons & Co., Upper Hinton Chambers, Bournemouth.

Moloniser Office Air Conditioner for sale. Hot or cold air, A.C. Floor cabinet. Photo F. J. Edwards, Ltd., 359 Euston Road, N.W. EUS 4681.

Graphotype Address Plate Embossing machine for sale, hand-operated, class 6140 for B plates. F. J. Edwards, Ltd., 359 Euston Road, London, N.W.1.

DICTAPHONE MODEL No. 12 Dictating and Transcribing machines, some with cabinets offered at £7 10s. each. All in perfect condition. Box 1198 c/o Business, 180 Fleet Street, E.C.4.

Hand Operated Letter Opening Machine by International Coin Counting Co. 1951 model. Brand new; unused. Recently inspected by makers' representative and passed as in perfect condition. £12 10s. 0d. Apply Box 1201 c/o BUSINESS, 180 Fleet Street, E.C.4.

ENDICIA DICTATING MACHINE, as new; also Recordon Machine, Spare Dictaphones, and Tape Recorders by Soundmirror, Baird and Grundig. Holdings, 39 Mincing Lane, BLACKBURN.

FULL STEAM IN FIVE MINUTES with B. & A. Electrode Boilers. Used by British industries for 20 years. No boilerhouse, no flue, no attendant needed. The most compact and convenient steam raisers available, can go beside machines using the steam. Write for leaflet 107 Bastian & Allen, Ltd., Ferndale Terrace, Harrow.

THE AMERICAN BOOK SUPPLY CO., LTD.

A varied stock of American books, especially Commercial, Technical, Scientific. Books not in stock procured with minimum delay. American periodicals on Annual Subscription. Open daily 9 am to 6 pm (including Saturdays) 47 Monmouth Street, London, W.C.2 Temple Bar 7120

CALCULATING SERVICES LTD

MACHINE OPERATING EXPERTS

We undertake all kinds of adding, calculating and statistical figure work including **STOCK SHEETS, ESTIMATES, etc.** Many large and small firms throughout Great Britain use our service. If interested send for brochure C.S.6.

LONDON OFFICE:

130 Crawford St., at Baker St., W.1
Tel: Wel. 4328. Miss Harper

BIRMINGHAM OFFICES:

1 Albert Street, 4. Tel: Cen. 6541
Miss Lefroy. (Established 21 years)

For Sale—cont.

Gestetner Duplicating Machine, Model 55E/8. Brief size, electrically operated, complete with all equipment and cabinet. Excellent condition. £60 or near offer. Apply Box No. 1185 c/o BUSINESS, 180 Fleet Street, E.C.4.

Kardex Cabinets in sizes 8 x 5, 6 x 4, 5 x 3, 11 x 6.

Cope-Chat, 6 x 4, 8 x 5.

Seldex, 8 x 5, size, Postindex, 8 x 5.

Shannon, 8 x 5, 6 x 4.

Strip Index Panels, 300, 6 x 4.

8 x 5 at 5s. each.

Please send for our latest list of used Visible Record Cabinets from England's largest stockist. Chubb Fire-proof Ledger Trolleys. Duo-Britannic Calculators. Sumlock Sterling Calculators. Plus Adders, Sterling Decimal. Office Tables, ex-Ministry of Works, 4' 6" x 2' 6", only £4 5s. 0d. each. 100 available. "The Office Centre", Commercial Equipment Co., 68/70 Queen Street, E.C.4.

MISCELLANEOUS DICTATING MACHINE CONSULTANTS

established thirty years prepared to advise you on the type of System best suited to your requirements, and to supply most good makes of electronic and acoustic machines. Consult the dictating machine specialists: Dixon's, 229 Oxford Road, Manchester. Telephone ARDWOOD 4269.

Free advice on better heating by oil filled radiators (rental terms), central heating, draught proofing, insulation, etc. Consult Hursell, 229 Regent Street, W. 1. Regent 1051

OFFICE EQUIPMENT

Patent Rights for Sale. Envelope-addressing device. Simple Stencil method. Cheaply produced. Complete letters patent. J. A. Thomson, The Vicarage, St. Michaels-on-Wyre, Preston.

RUBBER STAMPS

You can post your orders with every confidence. Bowen's, 7 Campbell Road, West Croydon, Surrey.

WANTED

Cash waiting for redundant Kardex, Roneo-dex, Office Machines and all types of Equipment. Write Box No. 1168 c/o BUSINESS, 180 Fleet Street, E.C.4.

100 new or second-hand stacking chairs either in wood or metal, required for canteen. Must be cheap. Send details to Box 1199 c/o Business, 180 Fleet Street, E.C.4.

Plus adding machines. F. Colclough, Ltd., 1 York Place, Scarborough.

ADDING—CALCULATING— ACCOUNTING MACHINES SALE OR HIRE

M. E. GREYER.

Gwydir Chambers, 104, High Holborn, London, W.C.1. Tel.: HOL 0208.

DUPLICATING

— Twenty-four hour service

TYPEWRITING

— Letters, Manuscripts etc.

Typewriter Supplied and Repaired Office Equipment and Printing.

Eliot Typewriter & Office Equipment Co., 25 Abingdon Road, Kensington, W.8. WESTERN 0832

REMINGTON ACCOUNTING MACHINES

for prompt delivery. All equipment rebuilt and fully guaranteed for one year. Maintenance service available on expiry of guarantee. Free preparation of systems, training of operators and installation services.

H. H. DURHAM LTD.,

85, BLACKFRIARS RD., LONDON, S.E.1. Tel.: WATERLOO 6081-5.

FIRE! TRAGEDY AVERTED BY NU-SWIFT!

"Escape seemed impossible... chemical machines spluttered and failed... acid squirted by one just missed my eyes... but reliable, non-damaging Nu-Swift saved us all."
NU-SWIFT LTD. • ELLAND • YORKS
In Every Ship of the Royal Navy

Accredited dealers for:
Burroughs } Portable Adding
Victor } Machines
Olivetti } Hand or Electric

High-grade S/H Accounting Equipment Available.

Adding Machine Service Company

1 NORTHINGTON ST.,
GRAY'S INN RD., LONDON W.C.1.

CHA. 8764

TARPAULINS FOR HIRE

S. LOMAS & Co.
(TARPAULINS) LTD.
WARD ROAD WORKS,
LONDON, E-15

MARyland 3616

MASONITE PRESWOOD

is so reliable...

Masonite Preswood has been used in industry for more than 20 years, and has proved its quality. Panelling, cupboards and fittings, signs and displays.

Samples and details from: Registered Trade Mark

Masonite
Ltd.

Bevis Marks House,
London, E.C.3.
AVENUE 2846.



***pitman***

Internal Auditing

Business Finance

Management: Its nature and significance

British Public Utilities

Leadership in the Factory

Stores Accounts and Stores

Control

By J. H. Burton. Fifth edition. 15/- net.
"Should be read and re read".
INSTITUTE OF BOOK KEEPERS JOURNAL

Shipping Law

By Lord Chorley, L.I.B., and O.C. Giles, L.I.B.
Third edition. 30/- net. "Well arranged and documented . . . its treatment of case law and statute law is particularly successful . . . fills a definite gap in legal literature." **LAW TIMES.**

• *Sir Isaac Pitman & Sons Ltd.*

● Parker Street, Kingsway, W.C.2.



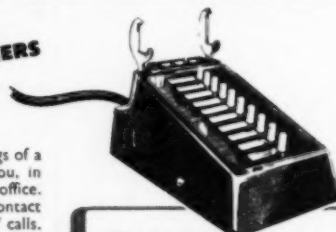
SGT MAJORS & CROSS COUNTRY RUNNERS

Do you have to possess the voice of a Sgt. Major and the legs of a cross-country runner to keep in touch with your staff, or have you, in the interests of efficiency, installed RELIANCE Loudspeaking Telephones in your office. Think of the time and labour you save—a flick of a switch puts you in immediate contact with any department, at the same time relieving the P.O. switchboard of all 'inside' calls.

Write today for our illustrated catalogue **£2.25**

THE RELIANCE TELEPHONE COMPANY LTD.
(A Subsidiary of the General Electric Company Limited)

43-47 PARKER STREET, KINGSWAY, LONDON, W.C.2. Tel.: Chancery 5341 (P.B.X.)
Branches throughout the United Kingdom · INTERNAL TELEPHONES · STAFF LOCATION · MUSIC FOR INDUSTRY



RELIANCE
Loudspeaking TELEPHONES

Hi-Dri's *a wise dry!*



Hi-Dri washroom service
gives a clean towel
for every dry. Just

take, use, destroy. All over in a
second or two. No queuing, no
waiting, no wasted man-hours
ticking away. No laundry bills
— but a clean bill of health...

Hi-Dri Sales Service, too. Dis-
penser cabinets
supplied free on
loan. Personal
attention: Hi-Dri
representatives call on request.



PHONE FOR A FREE DEMONSTRATION TODAY

VICTORIA 1951/2

HYGIENE PRODUCTS (GREAT BRITAIN) LTD.,

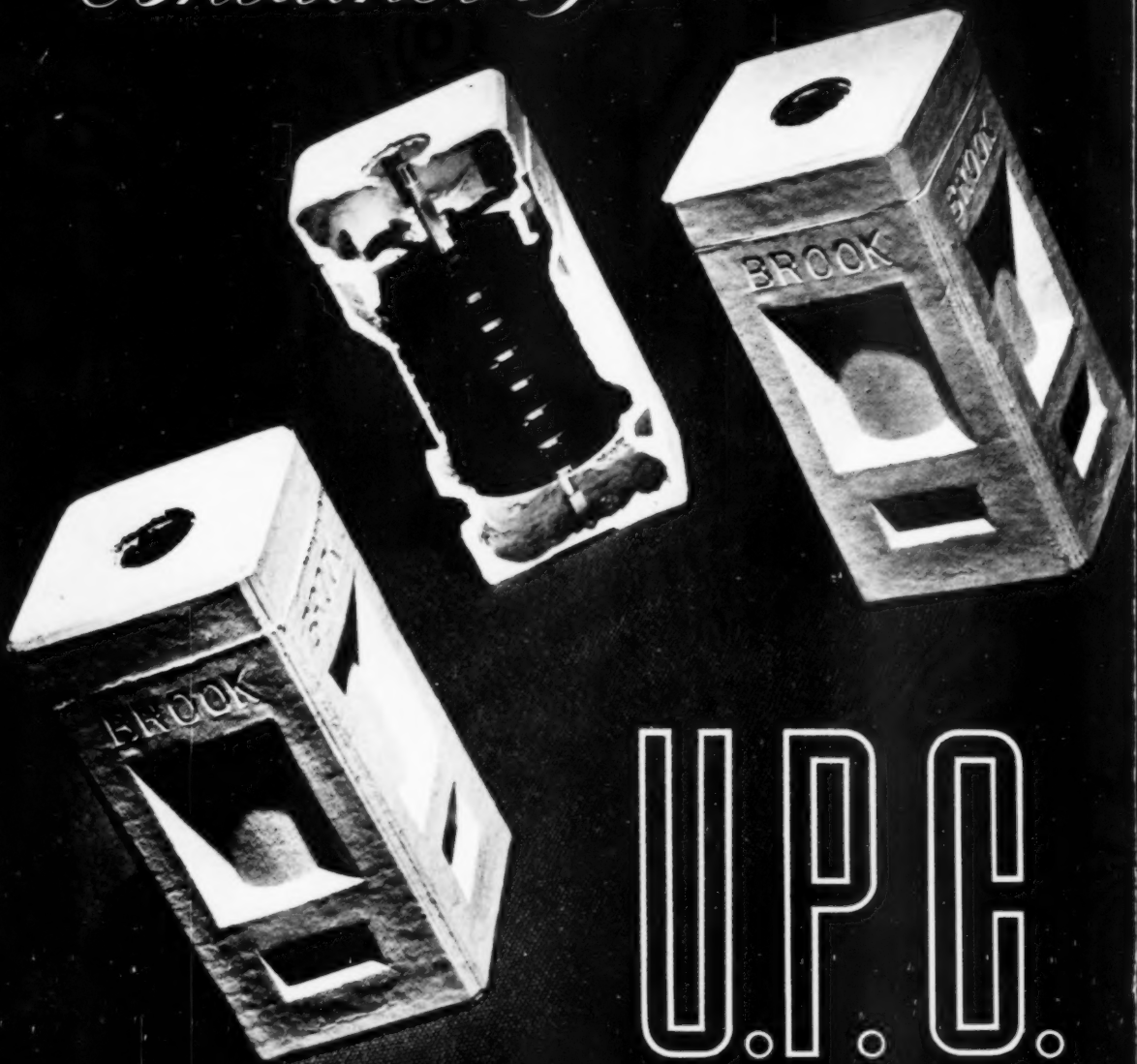
11 GROSVENOR GARDENS, WESTMINSTER, LONDON, S.W.1



Hi-Dri

PAPER TOWELS

Container by...



U.P.C.

UNIVERSAL PULP CONTAINERS LTD., MILTON OF CAMPSIE *by* GLASGOW